

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010**SUNDRY NOTICES AND REPORTS ON WELLS**
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.*5. Lease Serial No.
NMNM0559539

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.

SUBMIT IN TRIPLICATE - Other instructions on reverse side.

HOBBS OCD

JUL 21 2015

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

CIMAREX ENERGY COMPANY OF CO

Contact: TERRI STATHEM
E-Mail: tstathem@cimarex.com

3a. Address

600 NORTH MARIENFELD STREET, SUITE 600
MIDLAND, TX 79701

3b. Phone No. (include area code)

Ph: 432-620-1936

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec 29 T23S R32E NWNE 330FNL 2310FEL
32.165479 N Lat, 103.414425 W Lon

8. Well Name and No.

JAMES 29 FEDERAL 38 H ✓

9. API Well No.

30-025-41852-00-X1 ✓

10. Field and Pool, or Exploratory
SAND DUNES

11. County or Parish, and State

LEA COUNTY, NM

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Drilling Operations
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Cimarex Energy Co. respectfully requests approval to sidetrack the James 29 Federal 38H well as indicated below. J. Mason approved sidetrack on 10/19/14.

Set 9-5/8" intermediate casing at 4775' and cemented to surface.

Drilled 8.75" vertical hole to 7020'. BHA twisted off. Top of fish at 6760'. Fish = Bit, Motor, Stabilizer, Survey Tool, Stabilizer, Crossover, 6x 7" Drill Collars.

Cimarex has made fishing attempts but have been unsuccessful in freeing fish. We propose to set a 500' Kickoff plug with 235 sx of Class H cement at 17.5 ppg, 0.94 yield. WOC 8 hrs. Tag cmt. Sidetrack around fish and continue drilling 8.75" hole as originally planned.

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #289560 verified by the BLM Well Information System
For CIMAREX ENERGY COMPANY OF CO, sent to the Hobbs
Committed to AFMSS for processing by LINDA JIMENEZ on 05/08/2015 (15LJ1283SE)

Name (Printed/Typed) TERRI STATHEM

Title COORDINATOR REGULATORY COMPLIA

Signature (Electronic Submission)

Date 01/27/2015

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By CHRISTOPHER WALLS

Title PETROLEUM ENGINEER

Date 07/15/2015

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office Hobbs

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED **

JUL 21 2015

jm

Additional data for EC transaction #289560 that would not fit on the form

32. Additional remarks, continued

Directional plan attached.



Cimarex Energy Co.

Location: Lea County, NM
Field: (James Federal) Sec 29, TS 23 S, R 32 E
Facility: James Federal No. 38

Slot: No. 38H SHL
Well: No. 38H AWP ST01
Wellbore: No. 38H PWB ST01



**BAKER
HUGHES**

Plot reference wellpath is Rev B.O ST01

True vertical depths are referenced to Rig on No. 38H SHL (KB)	Grid System: NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet
Measured depth are referenced to Rig on No. 38H SHL (KB)	North Reference: Grid north
Rig on No. 38H SHL (KB) to Mean Sea Level: 3714 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: No. 38H SHL): -3659 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: abraak on 10/2/2014

Location Information

Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
James Federal No. 38	738420.500	466875.200	32°16'54.853"N	103°41'44.174"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)
No. 38H SHL	0.00	0.00	738420.500	466875.200
Rig on No. 38H SHL (KB) to Mud line (At Slot: No. 38H SHL)				25ft
Mean Sea Level to Mud line (At Slot: No. 38H SHL)				-3688ft
Rig on No. 38H SHL (KB) to Mean Sea Level				3714ft

Targets

Name	MD (ft)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
No. 38 PWB	13888.69	9400.00	-4623.22	.80.20	738340.30	467252.20	32°16'09.112"N	103°41'45.429"W

Tie-On Position

MD (ft)	Inc (")	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
6033.45	0.620	312.110	6032.42	78.30	-50.00	738370.51	466951.50	32°16'55.631"N	103°41'44.751"W

Bottom Hole Location

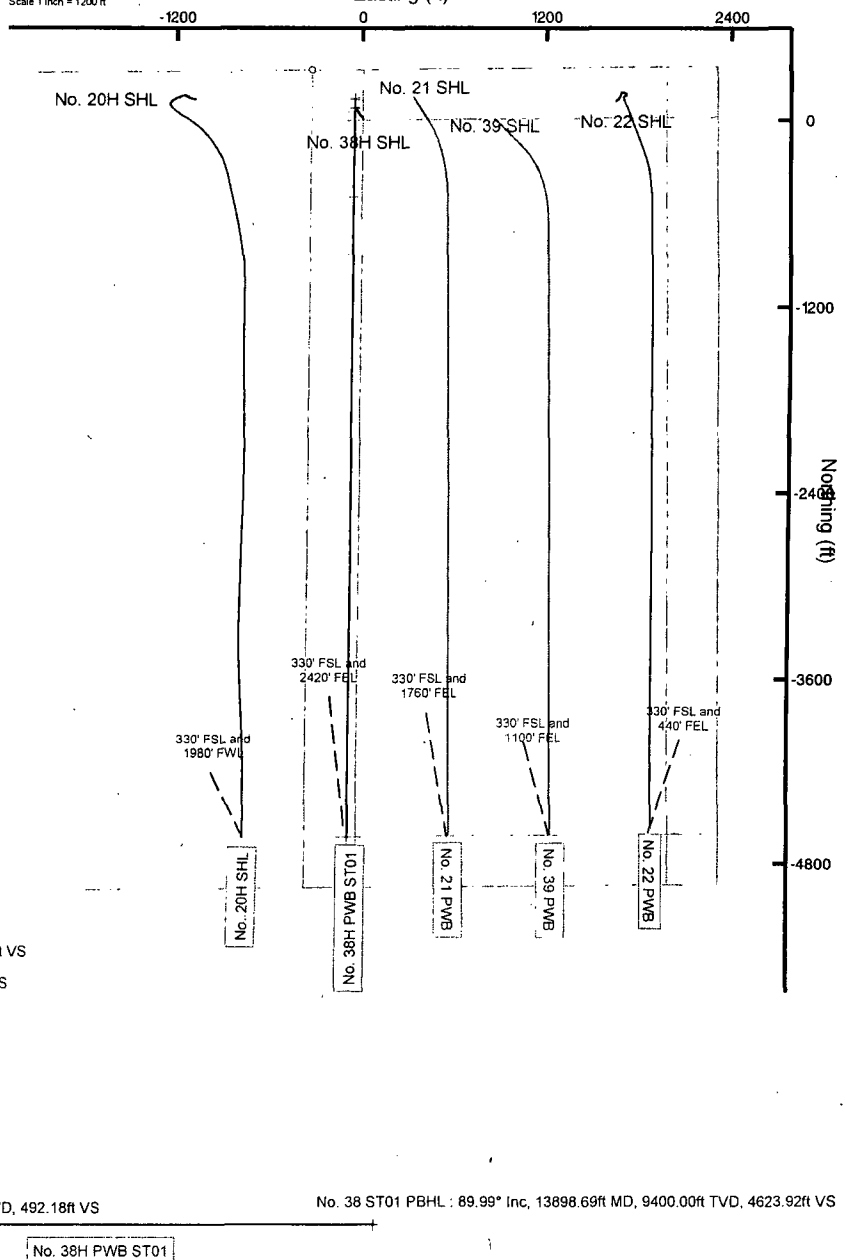
MD (ft)	Inc (")	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
13888.69	89.995	180.342	9400.00	-4623.22	-80.20	738340.30	467252.20	32°16'09.112"N	103°41'45.429"W

Well Profile Data

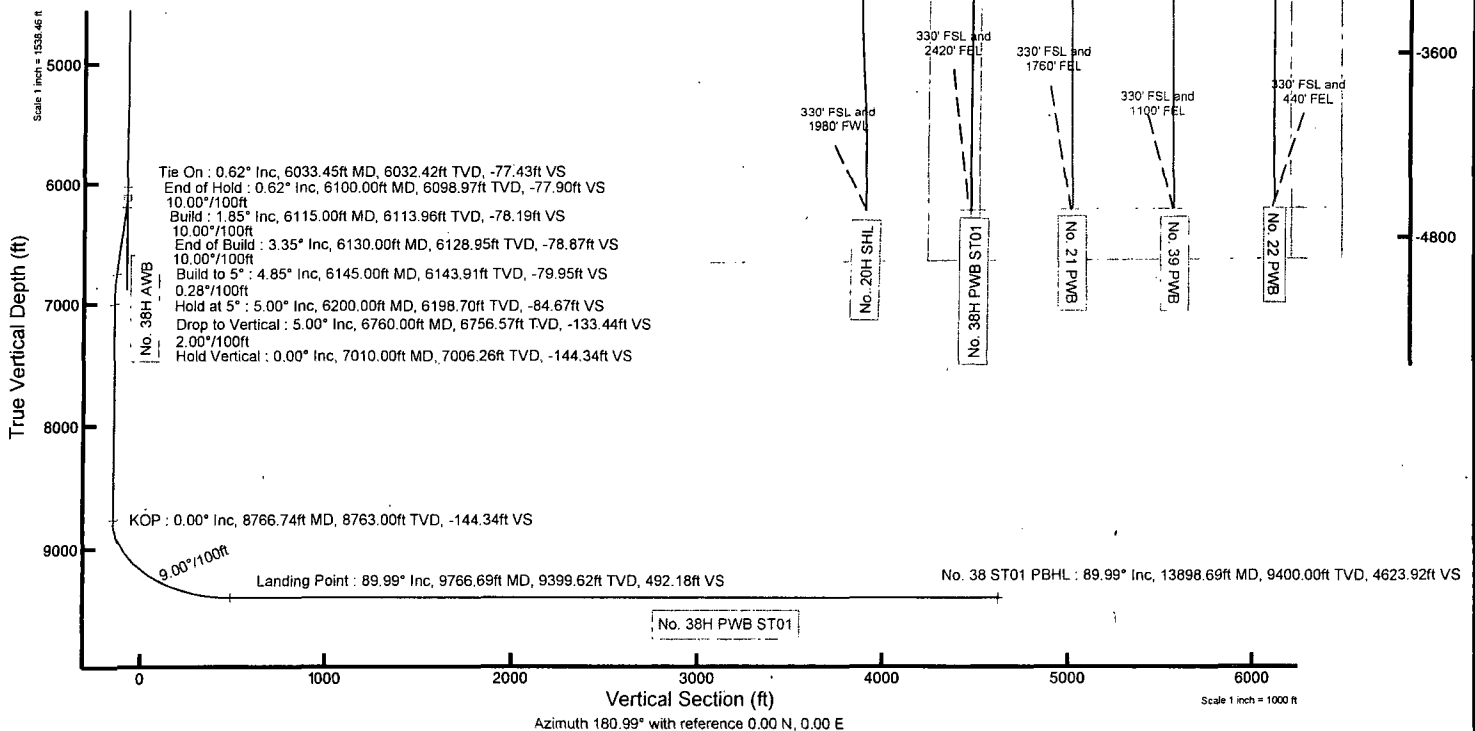
Design Comment	MD (ft)	Inc (")	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	CLS (7100ft)	VS (ft)
Tie On	6033.45	0.620	312.110	6032.42	78.30	-50.00	0.00	-77.43
End of Hold	6100.00	0.620	312.110	6098.97	78.79	-50.53	0.00	-77.90
Build	6115.00	1.849	359.427	6113.96	79.08	-50.59	10.00	-78.19
End of Build	6130.00	3.349	359.427	6128.95	79.78	-50.60	10.00	-78.87
Build to 5"	6145.00	4.849	359.427	6143.91	80.84	-50.61	10.00	-79.95
Hold at 5"	6200.00	5.000	359.000	6198.70	85.56	-50.67	0.28	-84.67
Drop to Vertical	6760.00	5.000	359.000	6756.57	134.38	-51.53	0.00	-133.44
Hold Vertical	7010.00	0.000	180.342	7008.26	145.26	-51.72	2.00	-144.34
KOP	8766.74	0.000	180.342	8763.00	145.26	-51.72	0.00	-144.34
Landing Point	9766.69	89.995	180.342	9399.62	-491.29	-55.52	9.00	492.18
No. 38 ST01 PWB	13888.69	89.995	180.342	9400.00	-4623.22	-80.20	0.00	4623.92

Scale 1 inch = 1200 ft

Easting (ft)



8GGM (1945.0 to 2016.0) Dip: 60.13° Field: 48264.2 nT
Magnetic North is 7.41 degrees East of True North (at 10/3/2014)
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 7.07 degrees





Planned Wellpath Report

Rev B.0 ST01

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 38H SHL
Area	Lea County, NM	Well	No. 38H AWB ST01
Field	(James Federal) Sec 29, TS 23 S, R 32 E	Wellbore	No. 38H PWB ST01
Facility	James Federal No. 38	Sidetrack from	No. 38H AWB at 6033.45 MD

REPORT SETUP INFORMATION

Projection System	NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet	Software System	WellArchitect® 4.0.0
North Reference	Grid	User	Abraall
Scale	0.999954	Report Generated	10/21/2014 at 2:12:30 PM
Convergence at slot	0.34° East	Database/Source file	WA_Midland/No. 38H_PWB_ST01.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	0.00	0.00	738420.50	466875.20	32°16'54.853"N	103°41'44.174"W
Facility Reference Pt			738420.50	466875.20	32°16'54.853"N	103°41'44.174"W
Field Reference Pt			165000.00	0.00	30°59'39.893"N	105°32'03.866"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No. 38H SHL (KB) to Facility Vertical Datum	25.00ft
Horizontal Reference Pt	Slot	Rig on No. 38H SHL (KB) to Mean Sea Level	3714.00ft
Vertical Reference Pt	Rig on No. 38H SHL (KB)	Rig on No. 38H SHL (KB) to Mud Line at Slot (No. 38H SHL)	25.00ft
MD Reference Pt	Rig on No. 38H SHL (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	180.99°



Planned Wellpath Report

Rev B.0 ST01

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Area	Lea County, NM	Well	No. 38H AWB ST01
Field	(James Federal) Sec 29, TS 23 S, R 32 E	Wellbore	No. 38H PWB ST01
Facility	James Federal No. 38	Sidetrack from	No. 38H AWB at 6033.45 MD

WELLPATH DATA (158 stations) † = 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
0.00†	0.000	48.750	0.00	0.00	0.00	0.00	738420.50	466875.20	32°16'54.853"N	103°41'44.174"W	0.00	
25.00	0.000	48.750	25.00	0.00	0.00	0.00	738420.50	466875.20	32°16'54.853"N	103°41'44.174"W	0.00	
49.99	0.480	48.750	49.99	-0.07	0.07	0.08	738420.58	466875.27	32°16'54.854"N	103°41'44.173"W	1.92	
98.60	1.490	343.750	98.59	-0.81	0.81	0.05	738420.55	466876.01	32°16'54.861"N	103°41'44.174"W	2.80	
142.69	0.620	113.520	142.68	-1.27	1.27	0.11	738420.61	466876.47	32°16'54.866"N	103°41'44.173"W	4.41	
167.25	0.880	14.910	167.24	-1.40	1.39	0.28	738420.78	466876.59	32°16'54.867"N	103°41'44.171"W	4.68	
227.52	0.790	11.440	227.50	-2.26	2.25	0.49	738420.99	466877.45	32°16'54.876"N	103°41'44.169"W	0.17	
266.92	0.880	5.020	266.90	-2.83	2.82	0.57	738421.07	466878.02	32°16'54.881"N	103°41'44.168"W	0.33	
298.49	0.880	8.320	298.46	-3.31	3.30	0.62	738421.12	466878.50	32°16'54.886"N	103°41'44.167"W	0.16	
331.45	0.700	11.920	331.42	-3.76	3.75	0.70	738421.20	466878.95	32°16'54.890"N	103°41'44.166"W	0.57	
392.34	0.700	356.710	392.31	-4.49	4.48	0.76	738421.26	466879.68	32°16'54.898"N	103°41'44.165"W	0.30	
426.43	0.700	6.910	426.39	-4.91	4.90	0.77	738421.27	466880.10	32°16'54.902"N	103°41'44.165"W	0.37	
482.67	0.790	4.140	482.63	-5.64	5.62	0.84	738421.34	466880.82	32°16'54.909"N	103°41'44.164"W	0.17	
573.84	0.620	6.130	573.79	-6.76	6.74	0.94	738421.44	466881.94	32°16'54.920"N	103°41'44.163"W	0.19	
664.82	0.620	355.840	664.77	-7.74	7.72	0.95	738421.45	466882.92	32°16'54.930"N	103°41'44.163"W	0.12	
755.78	0.790	2.210	755.72	-8.85	8.84	0.94	738421.44	466884.04	32°16'54.941"N	103°41'44.163"W	0.21	
845.51	0.790	346.120	845.44	-10.07	10.06	0.82	738421.32	466885.26	32°16'54.953"N	103°41'44.164"W	0.25	
936.55	0.880	339.440	936.47	-11.33	11.32	0.42	738420.92	466886.52	32°16'54.965"N	103°41'44.169"W	0.15	
1031.48	0.880	350.340	1031.39	-12.72	12.72	0.04	738420.54	466887.92	32°16'54.979"N	103°41'44.173"W	0.18	
1125.71	1.010	342.610	1125.61	-14.22	14.23	-0.33	738420.17	466889.43	32°16'54.994"N	103°41'44.177"W	0.19	
1146.32	0.880	337.820	1146.21	-14.54	14.55	-0.44	738420.06	466889.75	32°16'54.997"N	103°41'44.179"W	0.74	
1218.43	1.010	340.540	1218.31	-15.64	15.66	-0.86	738419.64	466890.86	32°16'55.008"N	103°41'44.183"W	0.19	
1387.31	0.790	339.220	1387.17	-18.12	18.15	-1.77	738418.73	466893.35	32°16'55.033"N	103°41'44.194"W	0.13	
1482.81	0.620	317.910	1482.67	-19.11	19.15	-2.35	738418.15	466894.35	32°16'55.043"N	103°41'44.200"W	0.32	
1576.36	0.880	327.620	1576.21	-20.08	20.13	-3.07	738417.43	466895.33	32°16'55.053"N	103°41'44.209"W	0.31	
1671.03	0.880	322.830	1670.87	-21.26	21.33	-3.90	738416.60	466896.52	32°16'55.065"N	103°41'44.218"W	0.08	
1763.41	0.700	324.150	1763.24	-22.26	22.35	-4.66	738415.84	466897.55	32°16'55.075"N	103°41'44.227"W	0.20	
1858.43	0.790	321.820	1858.25	-23.24	23.33	-5.41	738415.09	466898.53	32°16'55.085"N	103°41'44.236"W	0.10	
1952.22	0.880	315.710	1952.03	-24.24	24.36	-6.31	738414.19	466899.56	32°16'55.095"N	103°41'44.246"W	0.13	
2046.10	0.790	314.530	2045.90	-25.20	25.33	-7.27	738413.23	466900.53	32°16'55.104"N	103°41'44.257"W	0.10	
2141.96	0.790	308.810	2141.75	-26.06	26.21	-8.26	738412.24	466901.40	32°16'55.113"N	103°41'44.269"W	0.08	
2235.48	1.100	303.540	2235.26	-26.94	27.11	-9.51	738410.99	466902.30	32°16'55.122"N	103°41'44.283"W	0.34	
2329.19	0.880	300.330	2328.95	-27.77	27.97	-10.88	738409.62	466903.16	32°16'55.131"N	103°41'44.299"W	0.24	
2419.95	1.010	301.340	2419.70	-28.52	28.73	-12.17	738408.33	466903.93	32°16'55.138"N	103°41'44.314"W	0.14	
2516.44	1.010	310.530	2516.18	-29.49	29.73	-13.54	738406.96	466904.93	32°16'55.148"N	103°41'44.330"W	0.17	
2611.29	1.010	313.210	2611.01	-30.58	30.84	-14.78	738405.72	466906.04	32°16'55.160"N	103°41'44.344"W	0.05	
2706.39	1.190	306.750	2706.09	-31.72	32.01	-16.19	738404.31	466907.21	32°16'55.171"N	103°41'44.361"W	0.23	
2802.30	1.100	318.130	2801.99	-32.98	33.29	-17.60	738402.90	466908.49	32°16'55.184"N	103°41'44.377"W	0.25	
2897.29	1.190	311.450	2896.96	-34.29	34.62	-18.95	738401.55	466909.82	32°16'55.197"N	103°41'44.393"W	0.17	
2991.79	1.000	324.720	2991.44	-35.59	35.95	-20.16	738400.34	466911.14	32°16'55.210"N	103°41'44.407"W	0.33	
3085.96	1.410	319.010	3085.59	-37.11	37.49	-21.39	738399.11	466912.69	32°16'55.226"N	103°41'44.421"W	0.45	
3177.33	1.490	319.840	3176.93	-38.84	39.25	-22.90	738397.60	466914.45	32°16'55.243"N	103°41'44.438"W	0.09	
3270.99	1.490	324.810	3270.56	-40.74	41.17	-24.38	738396.12	466916.37	32°16'55.262"N	103°41'44.456"W	0.14	
3367.66	1.710	332.020	3367.19	-43.02	43.47	-25.78	738394.72	466918.67	32°16'55.285"N	103°41'44.472"W	0.31	
3461.91	1.800	325.650	3461.40	-45.46	45.94	-27.28	738393.22	466921.14	32°16'55.310"N	103°41'44.489"W	0.23	



Planned Wellpath Report

Rev B.0 ST01

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REFERENCE WELLPATH IDENTIFICATION

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WELLPATH DATA (158 stations) † = 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
3556.98	1.890	329.910	3556.42	-48.02	48.53	-28.91	738391.59	466923.72	32°16'55.335"N	103°41'44.508"W	0.17	
3652.40	1.890	330.130	3651.78	-50.72	51.25	-30.48	738390.02	466926.45	32°16'55.362"N	103°41'44.526"W	0.01	
3748.01	2.200	324.330	3747.33	-53.54	54.11	-32.34	738388.17	466929.31	32°16'55.391"N	103°41'44.547"W	0.39	
3843.06	2.110	329.420	3842.32	-56.50	57.10	-34.29	738386.21	466932.30	32°16'55.420"N	103°41'44.570"W	0.22	
3936.69	2.200	324.150	3935.88	-59.40	60.04	-36.22	738384.28	466935.24	32°16'55.450"N	103°41'44.592"W	0.23	
4033.11	1.800	332.150	4032.24	-62.21	62.88	-38.01	738382.49	466938.08	32°16'55.478"N	103°41'44.613"W	0.50	
4127.10	1.580	331.230	4126.19	-64.63	65.32	-39.32	738381.18	466940.52	32°16'55.502"N	103°41'44.628"W	0.24	
4222.84	1.490	338.350	4221.90	-66.92	67.63	-40.42	738380.08	466942.83	32°16'55.525"N	103°41'44.641"W	0.22	
4318.16	1.100	330.350	4317.19	-68.85	69.58	-41.33	738379.17	466944.78	32°16'55.544"N	103°41'44.651"W	0.45	
4413.82	0.700	342.920	4412.84	-70.20	70.94	-41.95	738378.55	466946.13	32°16'55.558"N	103°41'44.658"W	0.46	
4509.00	0.400	348.720	4508.02	-71.08	71.82	-42.19	738378.31	466947.02	32°16'55.567"N	103°41'44.661"W	0.32	
4808.00	0.220	353.730	4807.01	-72.67	73.41	-42.46	738378.05	466948.61	32°16'55.582"N	103°41'44.664"W	0.06	
4903.00	0.090	298.140	4902.01	-72.88	73.63	-42.54	738377.96	466948.83	32°16'55.585"N	103°41'44.665"W	0.19	
4998.00	0.220	267.330	4997.01	-72.90	73.66	-42.79	738377.71	466948.85	32°16'55.585"N	103°41'44.668"W	0.16	
5093.00	0.220	270.320	5092.01	-72.89	73.65	-43.16	738377.35	466948.85	32°16'55.585"N	103°41'44.672"W	0.01	
5188.00	0.220	278.230	5187.01	-72.91	73.68	-43.52	738376.98	466948.87	32°16'55.585"N	103°41'44.676"W	0.03	
5282.00	0.400	299.630	5281.01	-73.09	73.86	-43.98	738376.52	466949.06	32°16'55.587"N	103°41'44.682"W	0.22	
5376.00	0.620	296.820	5375.00	-73.47	74.26	-44.72	738375.78	466949.45	32°16'55.591"N	103°41'44.690"W	0.24	
5470.00	0.700	305.430	5469.00	-74.02	74.82	-45.64	738374.86	466950.01	32°16'55.596"N	103°41'44.701"W	0.14	
5561.42	0.700	303.320	5560.41	-74.63	75.45	-46.56	738373.94	466950.64	32°16'55.603"N	103°41'44.712"W	0.03	
5655.82	0.480	312.330	5654.81	-75.20	76.03	-47.34	738373.16	466951.23	32°16'55.609"N	103°41'44.721"W	0.25	
5749.00	0.620	307.850	5747.98	-75.76	76.60	-48.03	738372.48	466951.80	32°16'55.614"N	103°41'44.728"W	0.16	
5842.93	0.480	304.550	5841.91	-76.28	77.14	-48.75	738371.75	466952.33	32°16'55.620"N	103°41'44.737"W	0.15	
5938.14	0.480	318.040	5937.11	-76.79	77.66	-49.35	738371.16	466952.86	32°16'55.625"N	103°41'44.744"W	0.12	
6033.45	0.620	312.110	6032.42	-77.43	78.30	-50.00	738370.51	466953.50	32°16'55.631"N	103°41'44.751"W	0.00	Tie On
6100.00	0.620	312.110	6098.97	-77.90	78.79	-50.53	738369.97	466953.98	32°16'55.636"N	103°41'44.758"W	0.00	End of Hold
6115.00	1.849	359.427	6113.96	-78.19	79.08	-50.59	738369.91	466954.28	32°16'55.639"N	103°41'44.758"W	10.00	Build
6130.00	3.349	359.427	6128.95	-78.87	79.76	-50.60	738369.90	466954.96	32°16'55.646"N	103°41'44.758"W	10.00	End of Build
6133.45†	3.694	359.427	6132.39	-79.09	79.98	-50.60	738369.90	466955.17	32°16'55.648"N	103°41'44.758"W	10.00	
6145.00	4.849	359.427	6143.91	-79.95	80.84	-50.61	738369.89	466956.03	32°16'55.656"N	103°41'44.758"W	10.00	Build to 5°
6200.00	5.000	359.000	6198.70	-84.67	85.56	-50.67	738369.83	466960.75	32°16'55.703"N	103°41'44.759"W	0.28	Hold at 5°
6233.45†	5.000	359.000	6232.03	-87.58	88.47	-50.73	738369.78	466963.67	32°16'55.732"N	103°41'44.759"W	0.00	
6333.45†	5.000	359.000	6331.65	-96.29	97.19	-50.88	738369.62	466972.38	32°16'55.818"N	103°41'44.760"W	0.00	
6433.45†	5.000	359.000	6431.27	-105.00	105.90	-51.03	738369.47	466981.10	32°16'55.904"N	103°41'44.761"W	0.00	
6533.45†	5.000	359.000	6530.89	-113.71	114.61	-51.18	738369.32	466989.81	32°16'55.991"N	103°41'44.763"W	0.00	
6633.45†	5.000	359.000	6630.50	-122.42	123.33	-51.33	738369.17	466998.52	32°16'56.077"N	103°41'44.764"W	0.00	
6733.45†	5.000	359.000	6730.12	-131.13	132.04	-51.49	738369.02	467007.24	32°16'56.163"N	103°41'44.765"W	0.00	
6760.00	5.000	359.000	6756.57	-133.44	134.36	-51.53	738368.98	467009.55	32°16'56.186"N	103°41'44.765"W	0.00	Drop to Vertical
6833.45†	3.531	359.000	6829.82	-138.90	139.82	-51.62	738368.88	467015.01	32°16'56.240"N	103°41'44.766"W	2.00	
6933.45†	1.531	359.000	6929.72	-143.32	144.23	-51.70	738368.80	467019.43	32°16'56.284"N	103°41'44.767"W	2.00	
7010.00	0.000	180.342	7006.26	-144.34	145.26	-51.72	738368.79	467020.45	32°16'56.294"N	103°41'44.767"W	2.00	Hold Vertical
7033.45†	0.000	180.342	7029.71	-144.34	145.26	-51.72	738368.79	467020.45	32°16'56.294"N	103°41'44.767"W	0.00	
7133.45†	0.000	180.342	7129.71	-144.34	145.26	-51.72	738368.79	467020.45	32°16'56.294"N	103°41'44.767"W	0.00	
7233.45†	0.000	180.342	7229.71	-144.34	145.26	-51.72	738368.79	467020.45	32°16'56.294"N	103°41'44.767"W	0.00	
7333.45†	0.000	180.342	7329.71	-144.34	145.26	-51.72	738368.79	467020.45	32°16'56.294"N	103°41'44.767"W	0.00	



Planned Wellpath Report

Rev B.0 ST01

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 38H SHL
Area	Lea County, NM	Well	No. 38H AWB ST01
Field	(James Federal) Sec 29, TS 23 S, R 32 E	Wellbore	No. 38H PWB ST01
Facility	James Federal No. 38	Sidetrack from	No. 38H AWB at 6033.45 MD

WELLPATH DATA (158 stations) † = 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
7433.45†	0.000	180.342	7429.71	-144.34	145.26	-51.72	738368.79	467020.45	32°16'56.294"N	103°41'44.767"W	0.00	
7533.45†	0.000	180.342	7529.71	-144.34	145.26	-51.72	738368.79	467020.45	32°16'56.294"N	103°41'44.767"W	0.00	
7633.45†	0.000	180.342	7629.71	-144.34	145.26	-51.72	738368.79	467020.45	32°16'56.294"N	103°41'44.767"W	0.00	
7733.45†	0.000	180.342	7729.71	-144.34	145.26	-51.72	738368.79	467020.45	32°16'56.294"N	103°41'44.767"W	0.00	
7833.45†	0.000	180.342	7829.71	-144.34	145.26	-51.72	738368.79	467020.45	32°16'56.294"N	103°41'44.767"W	0.00	
7933.45†	0.000	180.342	7929.71	-144.34	145.26	-51.72	738368.79	467020.45	32°16'56.294"N	103°41'44.767"W	0.00	
8033.45†	0.000	180.342	8029.71	-144.34	145.26	-51.72	738368.79	467020.45	32°16'56.294"N	103°41'44.767"W	0.00	
8133.45†	0.000	180.342	8129.71	-144.34	145.26	-51.72	738368.79	467020.45	32°16'56.294"N	103°41'44.767"W	0.00	
8233.45†	0.000	180.342	8229.71	-144.34	145.26	-51.72	738368.79	467020.45	32°16'56.294"N	103°41'44.767"W	0.00	
8333.45†	0.000	180.342	8329.71	-144.34	145.26	-51.72	738368.79	467020.45	32°16'56.294"N	103°41'44.767"W	0.00	
8433.45†	0.000	180.342	8429.71	-144.34	145.26	-51.72	738368.79	467020.45	32°16'56.294"N	103°41'44.767"W	0.00	
8533.45†	0.000	180.342	8529.71	-144.34	145.26	-51.72	738368.79	467020.45	32°16'56.294"N	103°41'44.767"W	0.00	
8633.45†	0.000	180.342	8629.71	-144.34	145.26	-51.72	738368.79	467020.45	32°16'56.294"N	103°41'44.767"W	0.00	
8733.45†	0.000	180.342	8729.71	-144.34	145.26	-51.72	738368.79	467020.45	32°16'56.294"N	103°41'44.767"W	0.00	
8766.74	0.000	180.342	8763.00	-144.34	145.26	-51.72	738368.79	467020.45	32°16'56.294"N	103°41'44.767"W	0.00	KOP
8833.45†	6.004	180.342	8829.58	-140.85	141.76	-51.74	738368.76	467016.96	32°16'56.259"N	103°41'44.767"W	9.00	
8933.45†	15.004	180.342	8927.81	-122.64	123.55	-51.85	738368.66	466998.75	32°16'56.079"N	103°41'44.770"W	9.00	
9033.45†	24.004	180.342	9021.97	-89.29	90.20	-52.05	738368.46	466965.40	32°16'55.749"N	103°41'44.774"W	9.00	
9133.45†	33.004	180.342	9109.76	-41.62	42.53	-52.33	738368.17	466917.73	32°16'55.277"N	103°41'44.781"W	9.00	
9233.45†	42.004	180.342	9189.01	19.20	-18.29	-52.69	738367.81	466856.91	32°16'54.676"N	103°41'44.789"W	9.00	
9333.45†	51.004	180.342	9257.77	91.66	-90.75	-53.13	738367.38	466784.45	32°16'53.959"N	103°41'44.800"W	9.00	
9433.45†	60.004	180.342	9314.35	173.99	-173.08	-53.62	738366.88	466702.13	32°16'53.144"N	103°41'44.811"W	9.00	
9533.45†	69.004	180.342	9357.35	264.15	-263.25	-54.16	738366.35	466611.96	32°16'52.252"N	103°41'44.823"W	9.00	
9633.45†	78.004	180.342	9385.72	359.93	-359.03	-54.73	738365.77	466516.19	32°16'51.304"N	103°41'44.837"W	9.00	
9733.45†	87.004	180.342	9398.75	458.96	-458.07	-55.32	738365.18	466417.15	32°16'50.324"N	103°41'44.850"W	9.00	
9766.69	89.995	180.342	9399.62	492.18	-491.29	-55.52	738364.98	466383.93	32°16'49.995"N	103°41'44.855"W	9.00	Landing Point
9833.45†	89.995	180.342	9399.63	558.94	-558.06	-55.92	738364.58	466317.17	32°16'49.335"N	103°41'44.864"W	0.00	
9933.45†	89.995	180.342	9399.64	658.94	-658.06	-56.52	738363.99	466217.18	32°16'48.345"N	103°41'44.878"W	0.00	
10033.45†	89.995	180.342	9399.64	758.93	-758.05	-57.11	738363.39	466117.18	32°16'47.356"N	103°41'44.892"W	0.00	
10133.45†	89.995	180.342	9399.65	858.92	-858.05	-57.71	738362.79	466017.19	32°16'46.367"N	103°41'44.906"W	0.00	
10233.45†	89.995	180.342	9399.66	958.92	-958.05	-58.31	738362.19	465917.20	32°16'45.377"N	103°41'44.920"W	0.00	
10333.45†	89.995	180.342	9399.67	1058.91	-1058.05	-58.91	738361.60	465817.20	32°16'44.388"N	103°41'44.934"W	0.00	
10433.45†	89.995	180.342	9399.68	1158.90	-1158.05	-59.50	738361.00	465717.21	32°16'43.398"N	103°41'44.948"W	0.00	
10533.45†	89.995	180.342	9399.69	1258.90	-1258.04	-60.10	738360.40	465617.22	32°16'42.409"N	103°41'44.962"W	0.00	
10633.45†	89.995	180.342	9399.70	1358.89	-1358.04	-60.70	738359.81	465517.22	32°16'41.419"N	103°41'44.975"W	0.00	
10733.45†	89.995	180.342	9399.71	1458.88	-1458.04	-61.29	738359.21	465417.23	32°16'40.430"N	103°41'44.989"W	0.00	
10833.45†	89.995	180.342	9399.72	1558.88	-1558.04	-61.89	738358.61	465317.24	32°16'39.440"N	103°41'45.003"W	0.00	
10933.45†	89.995	180.342	9399.73	1658.87	-1658.04	-62.49	738358.01	465217.24	32°16'38.451"N	103°41'45.017"W	0.00	
11033.45†	89.995	180.342	9399.74	1758.87	-1758.04	-63.09	738357.42	465117.25	32°16'37.462"N	103°41'45.031"W	0.00	
11133.45†	89.995	180.342	9399.75	1858.86	-1858.03	-63.68	738356.82	465017.26	32°16'36.472"N	103°41'45.045"W	0.00	
11233.45†	89.995	180.342	9399.75	1958.85	-1958.03	-64.28	738356.22	464917.26	32°16'35.483"N	103°41'45.059"W	0.00	
11333.45†	89.995	180.342	9399.76	2058.85	-2058.03	-64.88	738355.62	464817.27	32°16'34.493"N	103°41'45.073"W	0.00	
11433.45†	89.995	180.342	9399.77	2158.84	-2158.03	-65.48	738355.03	464717.28	32°16'33.504"N	103°41'45.086"W	0.00	
11533.45†	89.995	180.342	9399.78	2258.83	-2258.03	-66.07	738354.43	464617.28	32°16'32.514"N	103°41'45.100"W	0.00	
11633.45†	89.995	180.342	9399.79	2358.83	-2358.02	-66.67	738353.83	464517.29	32°16'31.525"N	103°41'45.114"W	0.00	



Planned Wellpath Report

Rev B.0 ST01

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 38H SHL
Area	Lea County, NM	Well	No. 38H AWB ST01
Field	(James Federal) Sec 29, TS 23 S, R 32 E	Wellbore	No. 38H PWB ST01
Facility	James Federal No. 38	Sidetrack from	No. 38H AWB at 6033.45 MD

WELLPATH DATA (158 stations) † = 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
11733.45†	89.995	180.342	9399.80	2458.82	-2458.02	-67.27	738353.23	464417.30	32°16'30.536"N	103°41'45.128"W	0.00	
11833.45†	89.995	180.342	9399.81	2558.81	-2558.02	-67.87	738352.64	464317.30	32°16'29.546"N	103°41'45.142"W	0.00	
11933.45†	89.995	180.342	9399.82	2658.81	-2658.02	-68.46	738352.04	464217.31	32°16'28.557"N	103°41'45.156"W	0.00	
12033.45†	89.995	180.342	9399.83	2758.80	-2758.02	-69.06	738351.44	464117.32	32°16'27.567"N	103°41'45.170"W	0.00	
12133.45†	89.995	180.342	9399.84	2858.79	-2858.02	-69.66	738350.84	464017.32	32°16'26.578"N	103°41'45.184"W	0.00	
12233.45†	89.995	180.342	9399.85	2958.79	-2958.01	-70.26	738350.25	463917.33	32°16'25.588"N	103°41'45.197"W	0.00	
12333.45†	89.995	180.342	9399.86	3058.78	-3058.01	-70.85	738349.65	463817.34	32°16'24.599"N	103°41'45.211"W	0.00	
12433.45†	89.995	180.342	9399.87	3158.77	-3158.01	-71.45	738349.05	463717.34	32°16'23.609"N	103°41'45.225"W	0.00	
12533.45†	89.995	180.342	9399.87	3258.77	-3258.01	-72.05	738348.46	463617.35	32°16'22.620"N	103°41'45.239"W	0.00	
12633.45†	89.995	180.342	9399.88	3358.76	-3358.01	-72.65	738347.86	463517.36	32°16'21.631"N	103°41'45.253"W	0.00	
12733.45†	89.995	180.342	9399.89	3458.76	-3458.01	-73.24	738347.26	463417.36	32°16'20.641"N	103°41'45.267"W	0.00	
12833.45†	89.995	180.342	9399.90	3558.75	-3558.00	-73.84	738346.66	463317.37	32°16'19.652"N	103°41'45.281"W	0.00	
12933.45†	89.995	180.342	9399.91	3658.74	-3658.00	-74.44	738346.07	463217.38	32°16'18.662"N	103°41'45.295"W	0.00	
13033.45†	89.995	180.342	9399.92	3758.74	-3758.00	-75.03	738345.47	463117.38	32°16'17.673"N	103°41'45.308"W	0.00	
13133.45†	89.995	180.342	9399.93	3858.73	-3858.00	-75.63	738344.87	463017.39	32°16'16.683"N	103°41'45.322"W	0.00	
13233.45†	89.995	180.342	9399.94	3958.72	-3958.00	-76.23	738344.27	462917.40	32°16'15.694"N	103°41'45.336"W	0.00	
13333.45†	89.995	180.342	9399.95	4058.72	-4057.99	-76.83	738343.68	462817.40	32°16'14.705"N	103°41'45.350"W	0.00	
13433.45†	89.995	180.342	9399.96	4158.71	-4157.99	-77.42	738343.08	462717.41	32°16'13.715"N	103°41'45.364"W	0.00	
13533.45†	89.995	180.342	9399.97	4258.70	-4257.99	-78.02	738342.48	462617.42	32°16'12.726"N	103°41'45.378"W	0.00	
13633.45†	89.995	180.342	9399.98	4358.70	-4357.99	-78.62	738341.88	462517.42	32°16'11.736"N	103°41'45.392"W	0.00	
13733.45†	89.995	180.342	9399.98	4458.69	-4457.99	-79.22	738341.29	462417.43	32°16'10.747"N	103°41'45.406"W	0.00	
13833.45†	89.995	180.342	9399.99	4558.68	-4557.99	-79.81	738340.69	462317.44	32°16'09.757"N	103°41'45.419"W	0.00	
13898.69	89.995	180.342	9400.00†	4623.92	-4623.22	-80.20	738340.30	462252.20	32°16'09.112"N	103°41'45.429"W	0.00	No. 38 ST01 PBHL

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
1) No. 38 PBHL	13898.69	9400.00	-4623.22	-80.20	738340.30	462252.20	32°16'09.112"N	103°41'45.429"W	point

SURVEY PROGRAM - Ref Wellbore: No. 38H PWB ST01 Ref Wellpath: Rev B.0 ST01

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
25.00	6033.45	ISCWSA MWD, Rev. 2 (Standard)		No. 38H AWB
6033.45	13898.69	AT Curve (Short Spaced)		No. 38H PWB ST01



Clearance Report

Rev B.0 ST01
Closest Approach
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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 38H SHL
Area	Lea County, NM	Well	No. 38H AWB ST01
Field	(James Federal) Sec 29, TS 23 S, R 32 E	Wellbore	No. 38H PWB ST01
Facility	James Federal No. 38	Sidetrack from	No. 38H AWB at 6033.45 MD

REPORT SETUP INFORMATION

Projection System	NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet	Software System	WellArchitect® 4.0.0
North Reference	Grid	User	Abraall
Scale	0.999954	Report Generated	10/21/2014 at 2:09:31 PM
Convergence at slot	0.34° East	Database/Source file	WA_Midland/No. 38H_PWB_ST01_CR.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	0.00	0.00	738420.50	466875.20	32°16'54.853"N	103°41'44.174"W
Facility Reference Pt			738420.50	466875.20	32°16'54.853"N	103°41'44.174"W
Field Reference Pt			165000.00	0.00	30°59'39.893"N	105°32'03.866"W

WELLPATH DATUM

Calculation method	Minimum Curvature	Rig on No. 38H SHL (KB) to Facility Vertical Datum	25.00ft
Horizontal Reference Pt	Slot	Rig on No. 38H SHL (KB) to Mean Sea Level	3714.00ft
Vertical Reference Pt	Rig on No. 38H SHL (KB)	Rig on No. 38H SHL (KB) to Mud Line at Slot (No. 38H SHL)	25.00ft
MD Reference Pt	Rig on No. 38H SHL (KB)		
Field Vertical Reference	Mean Sea Level		

POSITIONAL UNCERTAINTY CALCULATION SETTINGS

Ellipse Confidence Limit	3.00 Std Dev	Ellipse Start MD	25.00ft	Surface Position Uncertainty	included
Declination	7.41° East of TN	Dip Angle	60.13°	Mag Field Strength	48264 nT
Slot Surface Uncertainty @1SD		Horizontal	0.100ft	Vertical	0.100ft
Facility Surface Uncertainty @1SD		Horizontal	8.200ft	Vertical	1.000ft

Positional Uncertainty values in the WELLPATH DATA table are the projection of the ellipsoid of uncertainty onto the vertical and horizontal planes

ANTI-COLLISION RULE

Rule Name	Baker Hughes Stop Drilling	Rule Based On	Ratio
Plane of Rule	Closest Approach	Threshold Value	1.00
Subtract Casing & Hole Size	yes	Apply Cone of Safety	no

SURVEY PROGRAM - Ref Wellbore: No. 38H PWB ST01 Ref Wellpath: Rev B.0 ST01

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
25.00	6033.45	ISCWSA MWD, Rev. 2 (Standard)		No. 38H AWB
6033.45	13898.69	AT Curve (Short Spaced)		No. 38H PWB ST01



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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 38H SHL
Area	Lea County, NM	Well	No. 38H AWB ST01
Field	(James Federal) Sec 29, TS 23 S, R 32 E	Wellbore	No. 38H PWB ST01
Facility	James Federal No. 38	Sidetrack from	No. 38H AWB at 6033.45 MD

CALCULATION RANGE & CUTOFF

From: 25.00ft MD	To: 13898.69ft MD	C-C Cutoff: (none)
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OFFSET WELL CLEARANCE SUMMARY (5 Offset Wellpaths selected) Ratios are calculated in Closest Approach plane

Offset Facility	Offset Slot	Offset Well	Offset Wellbore	Offset Wellpath	C-C Clearance Distance			ACR Separation Ratio			
					Ref MD [ft]	Min C-C Clear Dist [ft]	Diverging from MD [ft]	Ref MD of Min Ratio [ft]	Min Ratio	Min Ratio Dvrg from [ft]	ACR Status
James Federal No. 38	No. 38H SHL	No. 38H	No. 38H AWB	No. 38H AWP	6033.45	0.00	6033.45	6034.09	0.00	9725.00	FAIL
Federal 29 James 21	No. 21 SHL	No. 21	No. 21 PWB	Rev-A.0	6879.22	380.63	8725.00	13898.69	2.13	13898.69	PASS
James 29 Federal No. 20H	No. 20H SHL	No. 20H	No. 20H SHL	No. 20H SHL	13595.82	676.40	13595.82	13898.69	2.41	13898.69	PASS
James 29 Federal 39	No. 39 SHL	No. 39	No. 39 PWB	Rev-B.0	6033.45	912.40	8733.45	13898.69	4.31	13898.69	PASS
James Federal No. 22	No. 22 SHL	No. 22	No. 22 PWB	Rev-B.0	8625.00	1752.10	8625.00	13898.69	6.50	13898.69	PASS



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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 38H SHL
Area	Lea County, NM	Well	No. 38H AWB ST01
Field	(James Federal) Sec 29, TS 23 S, R 32 E	Wellbore	No. 38H PWB ST01
Facility	James Federal No. 38	Sidetrack from	No. 38H AWB at 6033.45 MD

CLEARANCE DATA - Offset Wellbore: No. 38H AWB Offset Wellpath: No. 38H AWP

Facility: James Federal No. 38 Slot: No. 38H SHL Well: No. 38H Threshold Value=1.00 † = interpolated/extrapolated station

Ref MD [ft]	Ref TVD [ft]	Ref North [ft]	Ref East [ft]	Offset MD [ft]	Offset TVD [ft]	Offset North [ft]	Offset East [ft]	Horiz Bearing [°]	C-C Clear Dist [ft]	ACR MASD [ft]	Sep Ratio	ACR Status
6033.45	6032.42	78.30	-50.00	6033.45	6032.42	78.30	-50.00	99.84	0.00	0.00	NA	NA
6034.09†	6033.06	78.31	-50.00	6034.09	6033.06	78.31	-50.00	338.51	0.00	0.08	0.00	FAIL
6100.00	6098.97	78.79	-50.53	6100.00	6098.97	78.82	-50.54	338.53	0.04	1.60	0.02	FAIL
6115.00	6113.96	79.08	-50.59	6115.00	6113.96	78.95	-50.67	209.32	0.16	1.24	0.13	FAIL
6130.00	6128.95	79.76	-50.60	6129.99	6128.95	79.07	-50.80	196.09	0.72	0.70	1.02	PASS
6133.45†	6132.39	79.98	-50.60	6133.43	6132.40	79.10	-50.83	194.55	0.90	0.75	1.20	PASS
6145.00	6143.91	80.84	-50.61	6144.96	6143.92	79.20	-50.93	190.97	1.67	0.83	2.00	PASS
6200.00	6198.70	85.56	-50.67	6199.78	6198.74	79.62	-51.40	186.99	5.98	1.24	4.82	PASS
6233.45†	6232.03	88.47	-50.73	6233.12	6232.07	79.84	-51.69	186.40	8.69	1.44	6.05	PASS
6333.45†	6331.65	97.19	-50.88	6332.77	6331.72	80.41	-52.42	185.25	16.85	2.05	8.23	PASS
6433.45†	6431.27	105.90	-51.03	6432.39	6431.34	80.80	-52.92	184.31	25.17	2.70	9.32	PASS
6533.45†	6530.89	114.61	-51.18	6532.02	6530.97	81.13	-53.32	183.66	33.55	3.37	9.96	PASS
6633.45†	6630.50	123.33	-51.33	6631.56	6630.50	81.22	-53.42	182.84	42.16	4.05	10.41	PASS
6733.45†	6730.12	132.04	-51.49	6731.17	6730.12	81.22	-53.40	182.15	50.86	4.73	10.76	PASS
6760.00	6756.57	134.36	-51.53	6757.61	6756.56	81.22	-53.35	181.96	53.17	4.91	10.84	PASS
6833.45†	6829.82	139.82	-51.62	6830.86	6829.81	81.19	-53.09	181.43	58.65	5.44	10.78	PASS
6933.45†	6929.72	144.23	-51.70	6885.48	6884.43	81.19	-52.88	181.07	77.64	19.96	3.89	PASS
7010.00	7006.26	145.26	-51.72	6885.48	6884.43	81.19	-52.88	181.04	137.65	29.40	4.68	PASS
7033.45†	7029.71	145.26	-51.72	6885.48	6884.43	81.19	-52.88	181.04	158.78	30.38	5.23	PASS
7133.45†	7129.71	145.26	-51.72	6885.48	6884.43	81.19	-52.88	181.04	253.51	32.31	7.85	PASS
7233.45†	7229.71	145.26	-51.72	6885.48	6884.43	81.19	-52.88	181.04	351.18	33.13	10.60	PASS
7333.45†	7329.71	145.26	-51.72	6885.48	6884.43	81.19	-52.88	181.04	449.87	33.67	13.36	PASS
7433.45†	7429.71	145.26	-51.72	6885.48	6884.43	81.19	-52.88	181.04	549.03	34.12	16.09	PASS
7533.45†	7529.71	145.26	-51.72	6885.48	6884.43	81.19	-52.88	181.04	648.45	34.53	18.78	PASS
7633.45†	7629.71	145.26	-51.72	6885.48	6884.43	81.19	-52.88	181.04	748.03	34.92	21.42	PASS
7733.45†	7729.71	145.26	-51.72	6885.48	6884.43	81.19	-52.88	181.04	847.70	35.31	24.01	PASS
7833.45†	7829.71	145.26	-51.72	6885.48	6884.43	81.19	-52.88	181.04	947.45	35.69	26.54	PASS
7933.45†	7929.71	145.26	-51.72	6885.48	6884.43	81.19	-52.88	181.04	1047.24	36.08	29.03	PASS
8033.45†	8029.71	145.26	-51.72	6885.48	6884.43	81.19	-52.88	181.04	1147.07	36.46	31.46	PASS
8133.45†	8129.71	145.26	-51.72	6885.48	6884.43	81.19	-52.88	181.04	1246.93	36.85	33.84	PASS
8233.45†	8229.71	145.26	-51.72	6885.48	6884.43	81.19	-52.88	181.04	1346.80	37.24	36.17	PASS
8333.45†	8329.71	145.26	-51.72	6885.48	6884.43	81.19	-52.88	181.04	1446.70	37.63	38.44	PASS
8433.45†	8429.71	145.26	-51.72	6885.48	6884.43	81.19	-52.88	181.04	1546.61	38.03	40.67	PASS
8533.45†	8529.71	145.26	-51.72	6885.48	6884.43	81.19	-52.88	181.04	1646.53	38.43	42.85	PASS
8633.45†	8629.71	145.26	-51.72	6885.48	6884.43	81.19	-52.88	181.04	1746.45	38.83	44.97	PASS
8733.45†	8729.71	145.26	-51.72	6885.48	6884.43	81.19	-52.88	181.04	1846.39	39.24	47.05	PASS
8766.74	8763.00	145.26	-51.72	6885.48	6884.43	81.19	-52.88	181.04	1879.67	39.38	47.73	PASS
8833.45†	8829.58	141.76	-51.74	6885.48	6884.43	81.19	-52.88	181.08	1946.10	39.65	49.08	PASS
8933.45†	8927.81	123.55	-51.85	6885.48	6884.43	81.19	-52.88	181.40	2043.82	40.08	50.99	PASS
9033.45†	9021.97	90.20	-52.05	6885.48	6884.43	81.19	-52.88	185.28	2137.56	40.57	52.69	PASS
9133.45†	9109.76	42.53	-52.33	6885.48	6884.43	81.19	-52.88	359.19	2225.67	41.11	54.14	PASS
9233.45†	9189.01	-18.29	-52.69	6885.48	6884.43	81.19	-52.88	359.89	2306.73	41.70	55.32	PASS
9333.45†	9257.77	-90.75	-53.13	6885.48	6884.43	81.19	-52.88	0.08	2379.56	42.33	56.21	PASS
9433.45†	9314.35	-173.08	-53.62	6885.48	6884.43	81.19	-52.88	0.17	2443.19	43.00	56.82	PASS
9533.45†	9357.35	-263.25	-54.16	6885.48	6884.43	81.19	-52.88	0.21	2496.79	43.69	57.15	PASS



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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 38H SHL
Area	Lea County, NM	Well	No. 38H AWB ST01
Field	(James Federal) Sec 29, TS 23 S, R 32 E	Wellbore	No. 38H PWB ST01
Facility	James Federal No. 38	Sidetrack from	No. 38H AWB at 6033.45 MD

CLEARANCE DATA - Offset Wellbore: No. 38H AWB Offset Wellpath: No. 38H AWP

Facility: James Federal No. 38 Slot: No. 38H SHL Well: No. 38H Threshold Value=1.00 † = interpolated/extrapolated station

Ref MD [ft]	Ref TVD [ft]	Ref North [ft]	Ref East [ft]	Offset MD [ft]	Offset TVD [ft]	Offset North [ft]	Offset East [ft]	Horiz Bearing [°]	C-C Clear Dist [ft]	ACR MASD [ft]	Sep Ratio	ACR Status
9633.45†	9385.72	-359.03	-54.73	6885.48	6884.43	81.19	-52.88	0.24	2539.73	44.39	57.21	PASS
9733.45†	9398.75	-458.07	-55.32	6885.48	6884.43	81.19	-52.88	0.26	2571.50	45.10	57.02	PASS
9766.69	9399.62	-491.29	-55.52	6885.48	6884.43	81.19	-52.88	0.26	2579.52	45.20	57.07	PASS
9833.45†	9399.63	-558.06	-55.92	6885.48	6884.43	81.19	-52.88	0.27	2595.16	45.05	57.61	PASS
9933.45†	9399.64	-658.06	-56.52	6885.48	6884.43	81.19	-52.88	0.28	2621.59	44.80	58.52	PASS
10033.45†	9399.64	-758.05	-57.11	6885.48	6884.43	81.19	-52.88	0.29	2651.54	44.57	59.49	PASS
10133.45†	9399.65	-858.05	-57.71	6885.48	6884.43	81.19	-52.88	0.30	2684.87	44.35	60.54	PASS
10233.45†	9399.66	-958.05	-58.31	6885.48	6884.43	81.19	-52.88	0.30	2721.48	44.14	61.65	PASS
10333.45†	9399.67	-1058.05	-58.91	6885.48	6884.43	81.19	-52.88	0.30	2761.22	43.95	62.82	PASS
10433.45†	9399.68	-1158.05	-59.50	6885.48	6884.43	81.19	-52.88	0.31	2803.97	43.78	64.05	PASS
10533.45†	9399.69	-1258.04	-60.10	6885.48	6884.43	81.19	-52.88	0.31	2849.59	43.61	65.34	PASS
10633.45†	9399.70	-1358.04	-60.70	6885.48	6884.43	81.19	-52.88	0.31	2897.94	43.47	66.67	PASS
10733.45†	9399.71	-1458.04	-61.29	6885.48	6884.43	81.19	-52.88	0.31	2948.89	43.33	68.05	PASS
10833.45†	9399.72	-1558.04	-61.89	6885.48	6884.43	81.19	-52.88	0.32	3002.30	43.21	69.48	PASS
10933.45†	9399.73	-1658.04	-62.49	6885.48	6884.43	81.19	-52.88	0.32	3058.06	43.10	70.95	PASS
11033.45†	9399.74	-1758.04	-63.09	6885.48	6884.43	81.19	-52.88	0.32	3116.03	43.00	72.46	PASS
11133.45†	9399.75	-1858.03	-63.68	6885.48	6884.43	81.19	-52.88	0.32	3176.08	42.92	74.00	PASS
11233.45†	9399.75	-1958.03	-64.28	6885.48	6884.43	81.19	-52.88	0.32	3238.12	42.84	75.59	PASS
11333.45†	9399.76	-2058.03	-64.88	6885.48	6884.43	81.19	-52.88	0.32	3302.02	42.77	77.20	PASS
11433.45†	9399.77	-2158.03	-65.48	6885.48	6884.43	81.19	-52.88	0.32	3367.67	42.71	78.85	PASS
11533.45†	9399.78	-2258.03	-66.07	6885.48	6884.43	81.19	-52.88	0.32	3434.98	42.66	80.52	PASS
11633.45†	9399.79	-2358.02	-66.67	6885.48	6884.43	81.19	-52.88	0.32	3503.85	42.62	82.22	PASS
11733.45†	9399.80	-2458.02	-67.27	6885.48	6884.43	81.19	-52.88	0.33	3574.20	42.58	83.94	PASS
11833.45†	9399.81	-2558.02	-67.87	6885.48	6884.43	81.19	-52.88	0.33	3645.93	42.55	85.69	PASS
11933.45†	9399.82	-2658.02	-68.46	6885.48	6884.43	81.19	-52.88	0.33	3718.96	42.52	87.46	PASS
12033.45†	9399.83	-2758.02	-69.06	6885.48	6884.43	81.19	-52.88	0.33	3793.23	42.51	89.24	PASS
12133.45†	9399.84	-2858.02	-69.66	6885.48	6884.43	81.19	-52.88	0.33	3868.65	42.49	91.05	PASS
12233.45†	9399.85	-2958.01	-70.26	6885.48	6884.43	81.19	-52.88	0.33	3945.17	42.48	92.86	PASS
12333.45†	9399.86	-3058.01	-70.85	6885.48	6884.43	81.19	-52.88	0.33	4022.72	42.48	94.70	PASS
12433.45†	9399.87	-3158.01	-71.45	6885.48	6884.43	81.19	-52.88	0.33	4101.24	42.48	96.54	PASS
12533.45†	9399.87	-3258.01	-72.05	6885.48	6884.43	81.19	-52.88	0.33	4180.68	42.49	98.40	PASS
12633.45†	9399.88	-3358.01	-72.65	6885.48	6884.43	81.19	-52.88	0.33	4260.98	42.50	100.27	PASS
12733.45†	9399.89	-3458.01	-73.24	6885.48	6884.43	81.19	-52.88	0.33	4342.10	42.51	102.14	PASS
12833.45†	9399.90	-3558.00	-73.84	6885.48	6884.43	81.19	-52.88	0.33	4424.00	42.53	104.02	PASS
12933.45†	9399.91	-3658.00	-74.44	6885.48	6884.43	81.19	-52.88	0.33	4506.62	42.55	105.91	PASS
13033.45†	9399.92	-3758.00	-75.03	6885.48	6884.43	81.19	-52.88	0.33	4589.94	42.58	107.81	PASS
13133.45†	9399.93	-3858.00	-75.63	6885.48	6884.43	81.19	-52.88	0.33	4673.91	42.61	109.70	PASS
13233.45†	9399.94	-3958.00	-76.23	6885.48	6884.43	81.19	-52.88	0.33	4758.50	42.64	111.60	PASS
13333.45†	9399.95	-4057.99	-76.83	6885.48	6884.43	81.19	-52.88	0.33	4843.68	42.67	113.50	PASS
13433.45†	9399.96	-4157.99	-77.42	6885.48	6884.43	81.19	-52.88	0.33	4929.41	42.71	115.41	PASS
13533.45†	9399.97	-4257.99	-78.02	6885.48	6884.43	81.19	-52.88	0.33	5015.68	42.76	117.31	PASS
13633.45†	9399.98	-4357.99	-78.62	6885.48	6884.43	81.19	-52.88	0.33	5102.44	42.80	119.21	PASS
13733.45†	9399.98	-4457.99	-79.22	6885.48	6884.43	81.19	-52.88	0.33	5189.68	42.85	121.11	PASS
13833.45†	9399.99	-4557.99	-79.81	6885.48	6884.43	81.19	-52.88	0.33	5277.38	42.90	123.01	PASS
13898.69	9400.00	-4623.22	-80.20	6885.48	6884.43	81.19	-52.88	0.33	5334.82	42.94	124.25	PASS



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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 38H SHL
Area	Lea County, NM	Well	No. 38H AWB ST01
Field	(James Federal) Sec 29, TS 23 S, R 32 E	Wellbore	No. 38H PWB ST01
Facility	James Federal No. 38	Sidetrack from	No. 38H AWB at 6033.45 MD

POSITIONAL UNCERTAINTY - Offset Wellbore: No. 38H AWB Offset Wellpath: No. 38H AWP

Slot Surface Uncertainty @1SD	Horizontal	0.100ft	Vertical	0.100ft
Facility Surface Uncertainty @1SD	Horizontal	8.200ft	Vertical	1.000ft

WELLPATH COMPOSITION - Offset Wellbore: No. 38H AWB Offset Wellpath: No. 38H AWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
25.00	6885.48	ISCWSA MWD, Rev. 2 (Standard)	Xtreme Surveys <49-XXXX>	No. 38H AWB

OFFSET WELLPATH MD REFERENCE - Offset Wellbore: No. 38H AWB Offset Wellpath: No. 38H AWP

MD Reference: Rig on No. 38H SHL (KB)	Offset TVD & local coordinates use Reference Wellpath settings (See WELLPATH DATUM on page 1 of this report)
Ellipse Start MD	6033.45ft



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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 38H SHL
Area	Lea County, NM	Well	No. 38H AWB ST01
Field	(James Federal) Sec 29, TS 23 S, R 32 E	Wellbore	No. 38H PWB ST01
Facility	James Federal No. 38	Sidetrack from	No. 38H AWB at 6033.45 MD

CLEARANCE DATA - Offset Wellbore: No. 21 PWB Offset Wellpath: Rev-A.0

Facility: Federal 29 James 21 Slot: No. 21 SHL Well: No. 21 Threshold Value=1.00 † = interpolated/extrapolated station

Ref MD [ft]	Ref TVD [ft]	Ref North [ft]	Ref East [ft]	Offset MD [ft]	Offset TVD [ft]	Offset North [ft]	Offset East [ft]	Horiz Bearing [°]	C-C Clear Dist [ft]	ACR MASD [ft]	Sep Ratio	ACR Status
6033.45	6032.42	78.30	-50.00	6032.42	6032.42	148.21	328.92	79.55	385.31	63.82	6.04	PASS
6100.00	6098.97	78.79	-50.53	6098.97	6098.97	148.21	328.92	79.63	385.74	64.04	6.02	PASS
6115.00	6113.96	79.08	-50.59	6113.96	6113.96	148.21	328.92	79.68	385.75	64.08	6.02	PASS
6130.00	6128.95	79.76	-50.60	6128.95	6128.95	148.21	328.92	79.78	385.64	64.11	6.01	PASS
6133.45†	6132.39	79.98	-50.60	6132.39	6132.39	148.21	328.92	79.81	385.60	64.12	6.01	PASS
6145.00	6143.91	80.84	-50.61	6143.91	6143.91	148.21	328.92	79.93	385.46	64.15	6.01	PASS
6200.00	6198.70	85.56	-50.67	6198.70	6198.70	148.21	328.92	80.63	384.73	64.28	5.98	PASS
6233.45†	6232.03	88.47	-50.73	6232.03	6232.03	148.21	328.92	81.06	384.31	64.37	5.97	PASS
6333.45†	6331.65	97.19	-50.88	6331.65	6331.65	148.21	328.92	82.35	383.21	64.62	5.93	PASS
6433.45†	6431.27	105.90	-51.03	6431.27	6431.27	148.21	328.92	83.65	382.29	64.88	5.89	PASS
6533.45†	6530.89	114.61	-51.18	6530.89	6530.89	148.21	328.92	84.95	381.58	65.15	5.86	PASS
6633.45†	6630.50	123.33	-51.33	6630.50	6630.50	148.21	328.92	86.26	381.06	65.43	5.82	PASS
6733.45†	6730.12	132.04	-51.49	6730.12	6730.12	148.21	328.92	87.57	380.75	65.71	5.79	PASS
6760.00	6756.57	134.36	-51.53	6756.57	6756.57	148.21	328.92	87.92	380.69	65.79	5.79	PASS
6833.45†	6829.82	139.82	-51.62	6829.82	6829.82	148.21	328.92	88.74	380.63	66.00	5.77	PASS
6879.22†	6875.53	142.27	-51.66	6875.00	6875.00	148.21	328.92	89.11	380.63	66.14	5.76	PASS
6933.45†	6929.72	144.23	-51.70	6929.72	6929.72	148.21	328.92	89.40	380.64	66.30	5.74	PASS
7010.00	7006.26	145.26	-51.72	7006.26	7006.26	148.21	328.92	89.56	380.64	66.52	5.72	PASS
7033.45†	7029.71	145.26	-51.72	7029.71	7029.71	148.21	328.92	89.56	380.64	66.58	5.72	PASS
7133.45†	7129.71	145.26	-51.72	7129.71	7129.71	148.21	328.92	89.56	380.64	66.86	5.69	PASS
7233.45†	7229.71	145.26	-51.72	7229.71	7229.71	148.21	328.92	89.56	380.64	67.15	5.67	PASS
7333.45†	7329.71	145.26	-51.72	7329.71	7329.71	148.21	328.92	89.56	380.64	67.45	5.64	PASS
7433.45†	7429.71	145.26	-51.72	7429.71	7429.71	148.21	328.92	89.56	380.64	67.75	5.62	PASS
7533.45†	7529.71	145.26	-51.72	7529.71	7529.71	148.21	328.92	89.56	380.64	68.06	5.59	PASS
7633.45†	7629.71	145.26	-51.72	7629.71	7629.71	148.21	328.92	89.56	380.64	68.37	5.57	PASS
7733.45†	7729.71	145.26	-51.72	7729.71	7729.71	148.21	328.92	89.56	380.64	68.68	5.54	PASS
7833.45†	7829.71	145.26	-51.72	7829.71	7829.71	148.21	328.92	89.56	380.64	69.01	5.52	PASS
7933.45†	7929.71	145.26	-51.72	7929.71	7929.71	148.21	328.92	89.56	380.64	69.34	5.49	PASS
8033.45†	8029.71	145.26	-51.72	8029.71	8029.71	148.21	328.92	89.56	380.64	69.67	5.46	PASS
8133.45†	8129.71	145.26	-51.72	8129.71	8129.71	148.21	328.92	89.56	380.64	70.01	5.44	PASS
8233.45†	8229.71	145.26	-51.72	8229.71	8229.71	148.21	328.92	89.56	380.64	70.35	5.41	PASS
8333.45†	8329.71	145.26	-51.72	8329.71	8329.71	148.21	328.92	89.56	380.64	70.70	5.38	PASS
8433.45†	8429.71	145.26	-51.72	8429.71	8429.71	148.21	328.92	89.56	380.64	71.06	5.36	PASS
8533.45†	8529.71	145.26	-51.72	8529.71	8529.71	148.21	328.92	89.56	380.64	71.42	5.33	PASS
8633.45†	8629.71	145.26	-51.72	8629.71	8629.71	148.21	328.92	89.56	380.64	71.79	5.30	PASS
8733.45†	8729.71	145.26	-51.72	8728.08	8728.08	148.19	328.93	89.56	380.66	72.16	5.28	PASS
8766.74	8763.00	145.26	-51.72	8753.25	8753.24	147.60	329.31	89.65	381.16	72.28	5.27	PASS
8833.45†	8829.58	141.76	-51.74	8803.52	8803.30	143.94	331.68	89.68	384.33	72.37	5.31	PASS
8933.45†	8927.81	123.55	-51.85	8878.27	8876.73	132.40	339.16	88.70	394.43	72.58	5.43	PASS
9033.45†	9021.97	90.20	-52.05	8951.96	8947.05	114.03	351.07	86.62	410.71	72.70	5.65	PASS
9133.45†	9109.76	42.53	-52.33	9024.28	9013.16	89.49	366.97	83.61	432.84	72.85	5.94	PASS
9233.45†	9189.01	-18.29	-52.69	9095.06	9074.24	59.54	386.39	79.95	460.46	73.18	6.29	PASS
9333.45†	9257.77	-90.75	-53.13	9164.23	9129.74	24.95	408.81	75.94	493.11	73.79	6.68	PASS
9433.45†	9314.35	-173.08	-53.62	9239.51	9184.72	-18.23	436.63	72.47	530.21	74.92	7.08	PASS
9533.45†	9357.35	-263.25	-54.16	9374.18	9269.69	-111.51	482.97	74.23	564.99	77.49	7.29	PASS



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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 38H SHL
Area	Lea County, NM	Well	No. 38H AWB ST01
Field	(James Federal) Sec 29, TS 23 S, R 32 E	Wellbore	No. 38H PWB ST01
Facility	James Federal No. 38	Sidetrack from	No. 38H AWB at 6033.45 MD

CLEARANCE DATA - Offset Wellbore: No. 21 PWB Offset Wellpath: Rev-A.0

Facility: Federal 29 James 21 Slot: No. 21 SHL Well: No. 21 Threshold Value=1.00 † = interpolated/extrapolated station

Ref MD [ft]	Ref TVD [ft]	Ref North [ft]	Ref East [ft]	Offset MD [ft]	Offset TVD [ft]	Offset North [ft]	Offset East [ft]	Horiz Bearing [°]	C-C Clear Dist [ft]	ACR MASD [ft]	Sep Ratio	ACR Status
9633.45†	9385.72	-359.03	-54.73	9527.93	9343.06	-240.02	523.27	78.37	591.67	80.69	7.33	PASS
9733.45†	9398.75	-458.07	-55.32	9699.61	9390.30	-402.40	549.70	84.74	607.63	84.44	7.20	PASS
9766.69	9399.62	-491.29	-55.52	9759.61	9397.51	-461.79	553.93	87.23	610.17	85.77	7.11	PASS
9833.45†	9399.63	-558.06	-55.92	9852.33	9399.77	-554.43	555.70	89.66	611.63	88.15	6.94	PASS
9933.45†	9399.64	-658.06	-56.52	9952.32	9399.78	-654.42	556.30	89.66	612.82	91.48	6.70	PASS
10033.45†	9399.64	-758.05	-57.11	10052.32	9399.78	-754.41	556.89	89.66	614.01	95.11	6.46	PASS
10133.45†	9399.65	-858.05	-57.71	10152.31	9399.79	-854.40	557.48	89.66	615.20	99.00	6.21	PASS
10233.45†	9399.66	-958.05	-58.31	10252.30	9399.79	-954.39	558.08	89.66	616.40	103.13	5.98	PASS
10333.45†	9399.67	-1058.05	-58.91	10352.29	9399.80	-1054.38	558.67	89.66	617.59	107.47	5.75	PASS
10433.45†	9399.68	-1158.05	-59.50	10452.29	9399.81	-1154.37	559.26	89.66	618.78	112.00	5.52	PASS
10533.45†	9399.69	-1258.04	-60.10	10552.28	9399.81	-1254.36	559.86	89.66	619.97	116.68	5.31	PASS
10633.45†	9399.70	-1358.04	-60.70	10652.27	9399.82	-1354.35	560.45	89.66	621.16	121.51	5.11	PASS
10733.45†	9399.71	-1458.04	-61.29	10752.27	9399.82	-1454.35	561.05	89.66	622.35	126.47	4.92	PASS
10833.45†	9399.72	-1558.04	-61.89	10852.26	9399.83	-1554.34	561.64	89.66	623.54	131.54	4.74	PASS
10933.45†	9399.73	-1658.04	-62.49	10952.25	9399.83	-1654.33	562.23	89.66	624.73	136.71	4.57	PASS
11033.45†	9399.74	-1758.04	-63.09	11052.25	9399.84	-1754.32	562.83	89.66	625.93	141.97	4.41	PASS
11133.45†	9399.75	-1858.03	-63.68	11152.24	9399.85	-1854.31	563.42	89.66	627.12	147.31	4.26	PASS
11233.45†	9399.75	-1958.03	-64.28	11252.23	9399.85	-1954.30	564.01	89.66	628.31	152.72	4.11	PASS
11333.45†	9399.76	-2058.03	-64.88	11352.22	9399.86	-2054.29	564.61	89.66	629.50	158.20	3.98	PASS
11433.45†	9399.77	-2158.03	-65.48	11452.22	9399.86	-2154.28	565.20	89.66	630.69	163.73	3.85	PASS
11533.45†	9399.78	-2258.03	-66.07	11552.21	9399.87	-2254.27	565.80	89.66	631.88	169.32	3.73	PASS
11633.45†	9399.79	-2358.02	-66.67	11652.20	9399.87	-2354.27	566.39	89.66	633.07	174.95	3.62	PASS
11733.45†	9399.80	-2458.02	-67.27	11752.20	9399.88	-2454.26	566.98	89.66	634.26	180.63	3.51	PASS
11833.45†	9399.81	-2558.02	-67.87	11852.19	9399.88	-2554.25	567.58	89.66	635.45	186.34	3.41	PASS
11933.45†	9399.82	-2658.02	-68.46	11952.18	9399.89	-2654.24	568.17	89.66	636.65	192.09	3.31	PASS
12033.45†	9399.83	-2758.02	-69.06	12052.17	9399.90	-2754.23	568.76	89.66	637.84	197.87	3.22	PASS
12133.45†	9399.84	-2858.02	-69.66	12152.17	9399.90	-2854.22	569.36	89.66	639.03	203.68	3.14	PASS
12233.45†	9399.85	-2958.01	-70.26	12252.16	9399.91	-2954.21	569.95	89.66	640.22	209.52	3.06	PASS
12333.45†	9399.86	-3058.01	-70.85	12352.15	9399.91	-3054.20	570.55	89.66	641.41	215.39	2.98	PASS
12433.45†	9399.87	-3158.01	-71.45	12452.15	9399.92	-3154.20	571.14	89.66	642.60	221.28	2.90	PASS
12533.45†	9399.87	-3258.01	-72.05	12552.14	9399.92	-3254.19	571.73	89.66	643.79	227.17	2.83	PASS
12633.45†	9399.88	-3358.01	-72.65	12652.13	9399.93	-3354.18	572.33	89.66	644.98	233.11	2.77	PASS
12733.45†	9399.89	-3458.01	-73.24	12752.12	9399.93	-3454.17	572.92	89.66	646.17	239.06	2.70	PASS
12833.45†	9399.90	-3558.00	-73.84	12852.12	9399.94	-3554.16	573.51	89.66	647.37	245.02	2.64	PASS
12933.45†	9399.91	-3658.00	-74.44	12952.11	9399.95	-3654.15	574.11	89.66	648.56	251.00	2.58	PASS
13033.45†	9399.92	-3758.00	-75.03	13052.10	9399.95	-3754.14	574.70	89.66	649.75	257.00	2.53	PASS
13133.45†	9399.93	-3858.00	-75.63	13152.10	9399.96	-3854.13	575.29	89.66	650.94	263.00	2.48	PASS
13233.45†	9399.94	-3958.00	-76.23	13252.09	9399.96	-3954.12	575.89	89.66	652.13	269.02	2.42	PASS
13333.45†	9399.95	-4057.99	-76.83	13352.08	9399.97	-4054.12	576.48	89.66	653.32	275.05	2.38	PASS
13433.45†	9399.96	-4157.99	-77.42	13452.07	9399.97	-4154.11	577.08	89.66	654.51	281.10	2.33	PASS
13533.45†	9399.97	-4257.99	-78.02	13552.07	9399.98	-4254.10	577.67	89.66	655.70	287.15	2.28	PASS
13633.45†	9399.98	-4357.99	-78.62	13652.06	9399.99	-4354.09	578.26	89.66	656.89	293.21	2.24	PASS
13733.45†	9399.98	-4457.99	-79.22	13752.05	9399.99	-4454.08	578.86	89.66	658.09	299.29	2.20	PASS
13833.45†	9399.99	-4557.99	-79.81	13852.05	9400.00	-4554.07	579.45	89.66	659.28	305.37	2.16	PASS
13898.69	9400.00	-4623.22	-80.20	13915.60	9400.00	-4617.62	579.83	89.51	660.06	309.30	2.13	PASS



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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 38H SHL
Area	Lea County, NM	Well	No. 38H AWB ST01
Field	(James Federal) Sec 29, TS 23 S, R 32 E	Wellbore	No. 38H PWB ST01
Facility	James Federal No. 38	Sidetrack from	No. 38H AWB at 6033.45 MD

POSITIONAL UNCERTAINTY - Offset Wellbore: No. 21 PWB Offset Wellpath: Rev-A.0

Slot Surface Uncertainty @1SD	Horizontal	0.100ft	Vertical	0.100ft
Facility Surface Uncertainty @1SD	Horizontal	8.200ft	Vertical	1.000ft

SURVEY PROGRAM - Offset Wellbore: No. 21 PWB Offset Wellpath: Rev-A.0

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
25.00	13915.60	NaviTrak (Standard)		No. 21 PWB

OFFSET WELLPATH MD REFERENCE - Offset Wellbore: No. 21 PWB Offset Wellpath: Rev-A.0

MD Reference: Rig on No. 21 SHL (KB)	Offset TVD & local coordinates use Reference Wellpath settings (See WELLPATH DATUM on page 1 of this report)
Ellipse Start MD	25.00ft



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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 38H SHL
Area	Lea County, NM	Well	No. 38H AWB ST01
Field	(James Federal) Sec 29, TS 23 S, R 32 E	Wellbore	No. 38H PWB ST01
Facility	James Federal No. 38	Sidetrack from	No. 38H AWB at 6033.45 MD

CLEARANCE DATA - Offset Wellbore: No. 20H SHL Offset Wellpath: No. 20H SHL

Facility: James 29 Federal No. 20H Slot: No. 20H SHL Well: No. 20H Threshold Value=1.00 † = interpolated/extrapolated station

Ref MD [ft]	Ref TVD [ft]	Ref North [ft]	Ref East [ft]	Offset MD [ft]	Offset TVD [ft]	Offset North [ft]	Offset East [ft]	Horiz Bearing [°]	C-C Clear Dist [ft]	ACR MASD [ft]	Sep Ratio	ACR Status
6033.45	6032.42	78.30	-50.00	5991.61	6019.25	148.59	-1190.46	273.53	1142.71	62.08	18.41	PASS
6100.00	6098.97	78.79	-50.53	6067.41	6095.03	147.44	-1191.08	273.45	1142.62	62.29	18.34	PASS
6115.00	6113.96	79.08	-50.59	6084.21	6111.84	147.55	-1191.12	273.44	1142.58	62.32	18.33	PASS
6130.00	6128.95	79.76	-50.60	6101.02	6128.64	147.83	-1191.12	273.42	1142.55	62.36	18.32	PASS
6133.45†	6132.39	79.98	-50.60	6104.88	6132.50	147.91	-1191.12	273.41	1142.54	62.37	18.32	PASS
6145.00	6143.91	80.84	-50.61	6117.82	6145.43	148.26	-1191.09	273.38	1142.47	62.39	18.31	PASS
6200.00	6198.70	85.56	-50.67	6160.89	6188.50	149.25	-1191.19	273.20	1142.34	62.48	18.28	PASS
6233.45†	6232.03	88.47	-50.73	6186.89	6214.49	149.49	-1191.49	273.06	1142.53	62.53	18.27	PASS
6333.45†	6331.65	97.19	-50.88	6272.11	6299.68	149.03	-1193.47	272.60	1144.21	62.70	18.25	PASS
6433.45†	6431.27	105.90	-51.03	6370.86	6398.38	147.93	-1196.47	272.10	1146.69	62.91	18.23	PASS
6533.45†	6530.89	114.61	-51.18	6467.00	6494.46	146.21	-1199.32	271.58	1149.15	63.13	18.20	PASS
6633.45†	6630.50	123.33	-51.33	6570.25	6597.66	145.31	-1202.60	271.09	1151.94	63.37	18.18	PASS
6733.45†	6730.12	132.04	-51.49	6671.31	6698.68	144.89	-1205.37	270.64	1154.38	63.62	18.15	PASS
6760.00	6756.57	134.36	-51.53	6698.64	6726.00	144.76	-1206.11	270.52	1155.03	63.68	18.14	PASS
6833.45†	6829.82	139.82	-51.62	6776.16	6803.49	143.77	-1208.02	270.20	1156.70	63.88	18.11	PASS
6933.45†	6929.72	144.23	-51.70	6873.78	6901.06	141.89	-1210.35	269.88	1159.01	64.12	18.08	PASS
7010.00	7006.26	145.26	-51.72	6959.28	6986.53	140.58	-1212.13	269.77	1160.59	64.33	18.04	PASS
7033.45†	7029.71	145.26	-51.72	6982.63	7009.88	140.32	-1212.51	269.76	1160.98	64.39	18.03	PASS
7133.45†	7129.71	145.26	-51.72	7071.72	7098.94	138.93	-1214.42	269.69	1163.13	64.59	18.01	PASS
7233.45†	7229.71	145.26	-51.72	7152.43	7179.59	137.58	-1217.21	269.62	1166.60	64.77	18.01	PASS
7333.45†	7329.71	145.26	-51.72	7273.92	7301.00	136.26	-1221.38	269.56	1170.05	65.09	17.98	PASS
7433.45†	7429.71	145.26	-51.72	7377.06	7404.11	135.39	-1223.49	269.52	1172.10	65.35	17.94	PASS
7533.45†	7529.71	145.26	-51.72	7466.43	7493.44	134.16	-1225.99	269.46	1174.89	65.58	17.92	PASS
7633.45†	7629.71	145.26	-51.72	7571.97	7598.91	132.01	-1228.98	269.36	1177.74	65.86	17.88	PASS
7733.45†	7729.71	145.26	-51.72	7674.83	7701.72	129.75	-1231.45	269.25	1180.16	66.13	17.84	PASS
7833.45†	7829.71	145.26	-51.72	7776.93	7803.78	128.37	-1233.83	269.18	1182.51	66.41	17.80	PASS
7933.45†	7929.71	145.26	-51.72	7878.26	7905.07	126.24	-1235.89	269.08	1184.58	66.70	17.76	PASS
8033.45†	8029.71	145.26	-51.72	7977.61	8004.38	124.39	-1237.96	268.99	1186.70	66.99	17.72	PASS
8133.45†	8129.71	145.26	-51.72	8074.12	8100.86	123.30	-1240.10	268.94	1188.94	67.27	17.67	PASS
8233.45†	8229.71	145.26	-51.72	8185.09	8211.79	121.63	-1242.44	268.86	1191.10	67.59	17.62	PASS
8333.45†	8329.71	145.26	-51.72	8286.67	8313.35	119.93	-1243.81	268.78	1192.47	67.90	17.56	PASS
8433.45†	8429.71	145.26	-51.72	8387.99	8414.63	117.40	-1245.06	268.66	1193.77	68.21	17.50	PASS
8533.45†	8529.71	145.26	-51.72	8475.44	8502.02	114.70	-1246.56	268.54	1195.56	68.49	17.46	PASS
8633.45†	8629.71	145.26	-51.72	8584.89	8611.41	111.51	-1248.62	268.39	1197.52	68.83	17.40	PASS
8733.45†	8729.71	145.26	-51.72	9532.09	9390.90	-140.45	-968.75	252.70	1166.09	65.27	17.87	PASS
8766.74	8763.00	145.26	-51.72	9542.83	9395.42	-148.36	-963.05	252.14	1147.47	65.79	17.44	PASS
8833.45†	8829.58	141.76	-51.74	9563.70	9403.65	-164.24	-952.30	251.23	1110.95	66.83	16.62	PASS
8933.45†	8927.81	123.55	-51.85	9596.86	9415.36	-190.70	-936.12	250.44	1057.54	68.42	15.46	PASS
9033.45†	9021.97	90.20	-52.05	9634.84	9427.02	-222.38	-918.75	250.17	1006.45	69.98	14.38	PASS
9133.45†	9109.76	42.53	-52.33	9668.11	9435.26	-251.48	-904.90	250.97	958.79	71.42	13.43	PASS
9233.45†	9189.01	-18.29	-52.69	9702.55	9441.29	-283.02	-892.47	252.50	915.95	72.77	12.59	PASS
9333.45†	9257.77	-90.75	-53.13	9743.15	9446.07	-321.28	-879.80	254.42	878.63	74.14	11.85	PASS
9433.45†	9314.35	-173.08	-53.62	9789.87	9449.11	-366.28	-867.69	256.65	847.46	75.59	11.21	PASS
9533.45†	9357.35	-263.25	-54.16	9873.46	9451.41	-447.59	-848.41	256.93	820.77	77.70	10.56	PASS
9633.45†	9385.72	-359.03	-54.73	9963.69	9453.50	-535.44	-827.95	257.15	795.98	80.06	9.94	PASS



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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 38H SHL
Area	Lea County, NM	Well	No. 38H AWB ST01
Field	(James Federal) Sec 29, TS 23 S, R 32 E	Wellbore	No. 38H PWB ST01
Facility	James Federal No. 38	Sidetrack from	No. 38H AWB at 6033.45 MD

CLEARANCE DATA - Offset Wellbore: No. 20H SHL Offset Wellpath: No. 20H SHL

Facility: James 29 Federal No. 20H Slot: No. 20H SHL Well: No. 20H Threshold Value=1.00 † = interpolated/extrapolated station

Ref MD [ft]	Ref TVD [ft]	Ref North [ft]	Ref East [ft]	Offset MD [ft]	Offset TVD [ft]	Offset North [ft]	Offset East [ft]	Horiz Bearing [°]	C-C Clear Dist [ft]	ACR MASD [ft]	Sep Ratio	ACR Status
9733.45†	9398.75	-458.07	-55.32	10041.98	9455.92	-611.90	-811.26	258.50	773.55	82.41	9.39	PASS
9766.69	9399.62	-491.29	-55.52	10068.97	9456.81	-638.34	-805.92	258.91	766.81	83.26	9.21	PASS
9833.45†	9399.63	-558.06	-55.92	10124.86	9458.34	-693.20	-795.41	259.64	754.03	85.10	8.86	PASS
9933.45†	9399.64	-658.06	-56.52	10206.84	9459.39	-773.98	-781.44	260.92	736.57	88.06	8.36	PASS
10033.45†	9399.64	-758.05	-57.11	10282.01	9458.69	-848.37	-770.65	262.79	721.65	91.09	7.92	PASS
10133.45†	9399.65	-858.05	-57.71	10351.84	9458.01	-917.79	-763.33	265.16	710.55	94.14	7.55	PASS
10233.45†	9399.66	-958.05	-58.31	10419.13	9457.69	-984.95	-759.23	267.80	703.83	97.21	7.24	PASS
10333.45†	9399.67	-1058.05	-58.91	10499.05	9457.74	-1064.85	-757.47	269.44	701.01	100.66	6.96	PASS
10433.45†	9399.68	-1158.05	-59.50	10589.77	9457.90	-1155.58	-757.36	270.20	700.28	104.53	6.70	PASS
10533.45†	9399.69	-1258.04	-60.10	10685.47	9457.57	-1251.27	-758.04	270.56	700.37	108.70	6.44	PASS
10633.45†	9399.70	-1358.04	-60.70	10785.01	9457.24	-1350.80	-759.15	270.59	700.86	113.03	6.20	PASS
10733.45†	9399.71	-1458.04	-61.29	10888.41	9456.95	-1454.20	-760.04	270.32	701.09	117.52	5.97	PASS
10833.45†	9399.72	-1558.04	-61.89	10998.74	9456.04	-1564.53	-759.98	269.47	700.38	122.31	5.73	PASS
10933.45†	9399.73	-1658.04	-62.49	11111.46	9454.91	-1677.21	-757.64	268.42	697.61	127.28	5.48	PASS
11033.45†	9399.74	-1758.04	-63.09	11202.29	9453.96	-1768.02	-755.93	269.17	695.03	131.77	5.27	PASS
11133.45†	9399.75	-1858.03	-63.68	11301.94	9452.72	-1867.65	-754.50	269.20	692.91	136.57	5.07	PASS
11233.45†	9399.75	-1958.03	-64.28	11394.58	9451.67	-1960.28	-753.79	269.81	691.46	141.29	4.89	PASS
11333.45†	9399.76	-2058.03	-64.88	11487.19	9450.74	-2052.89	-754.03	270.43	691.06	146.03	4.73	PASS
11433.45†	9399.77	-2158.03	-65.48	11578.79	9450.02	-2144.47	-755.36	271.13	691.84	150.77	4.59	PASS
11533.45†	9399.78	-2258.03	-66.07	11675.05	9449.38	-2240.70	-757.65	271.44	693.57	155.71	4.45	PASS
11633.45†	9399.79	-2358.02	-66.67	11777.45	9448.45	-2343.07	-760.06	271.24	695.26	160.88	4.32	PASS
11733.45†	9399.80	-2458.02	-67.27	11874.50	9447.36	-2440.09	-762.28	271.48	696.86	165.89	4.20	PASS
11833.45†	9399.81	-2558.02	-67.87	11965.65	9446.02	-2531.17	-765.40	272.20	699.58	170.74	4.10	PASS
11933.45†	9399.82	-2658.02	-68.46	12067.43	9444.76	-2632.87	-769.45	272.06	702.87	175.99	3.99	PASS
12033.45†	9399.83	-2758.02	-69.06	12173.57	9444.35	-2738.96	-772.56	271.55	705.16	181.39	3.89	PASS
12133.45†	9399.84	-2858.02	-69.66	12275.85	9444.24	-2841.20	-775.37	271.37	707.31	186.70	3.79	PASS
12233.45†	9399.85	-2958.01	-70.26	12376.53	9444.32	-2941.86	-777.46	271.31	708.79	191.97	3.69	PASS
12333.45†	9399.86	-3058.01	-70.85	12476.06	9444.69	-3041.36	-779.90	271.35	710.66	197.22	3.60	PASS
12433.45†	9399.87	-3158.01	-71.45	12573.74	9445.26	-3139.01	-782.17	271.53	712.43	202.41	3.52	PASS
12533.45†	9399.87	-3258.01	-72.05	12680.92	9446.15	-3246.16	-784.74	270.95	714.29	208.00	3.43	PASS
12633.45†	9399.88	-3358.01	-72.65	12801.64	9447.50	-3366.86	-784.94	269.29	713.94	214.01	3.34	PASS
12733.45†	9399.89	-3458.01	-73.24	12913.45	9448.91	-3478.63	-782.58	268.33	711.33	219.68	3.24	PASS
12833.45†	9399.90	-3558.00	-73.84	13022.58	9450.24	-3587.67	-778.35	267.59	706.92	225.28	3.14	PASS
12933.45†	9399.91	-3658.00	-74.44	13123.84	9451.17	-3688.84	-773.97	267.48	702.08	230.73	3.04	PASS
13033.45†	9399.92	-3758.00	-75.03	13228.75	9452.35	-3793.62	-768.95	267.06	696.81	236.26	2.95	PASS
13133.45†	9399.93	-3858.00	-75.63	13328.95	9453.85	-3893.66	-763.52	267.03	690.92	241.69	2.86	PASS
13233.45†	9399.94	-3958.00	-76.23	13419.46	9453.93	-3984.07	-759.29	267.81	685.69	246.99	2.78	PASS
13333.45†	9399.95	-4057.99	-76.83	13514.15	9453.69	-4078.71	-756.27	268.25	681.88	252.36	2.70	PASS
13433.45†	9399.96	-4157.99	-77.42	13607.41	9454.04	-4171.93	-753.70	268.82	678.58	257.66	2.63	PASS
13533.45†	9399.97	-4257.99	-78.02	13696.43	9453.82	-4260.94	-752.58	269.75	676.71	262.83	2.57	PASS
13595.82†	9399.97	-4320.36	-78.39	13749.93	9453.71	-4314.44	-752.63	270.50	676.40	266.04	2.54	PASS
13633.45†	9399.98	-4357.99	-78.62	13785.94	9453.65	-4350.45	-752.93	270.64	676.49	267.97	2.52	PASS
13733.45†	9399.98	-4457.99	-79.22	13876.87	9453.50	-4441.37	-754.59	271.41	677.70	273.11	2.48	PASS
13833.45†	9399.99	-4557.99	-79.81	13979.53	9453.37	-4543.99	-757.37	271.18	679.80	278.78	2.44	PASS
13898.69	9400.00	-4623.22	-80.20	14045.51	9453.81	-4609.96	-758.63	271.12	680.69	282.39	2.41	PASS



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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 38H SHL
Area	Lea County, NM	Well	No. 38H AWB ST01
Field	(James Federal) Sec 29, TS 23 S, R 32 E	Wellbore	No. 38H PWB ST01
Facility	James Federal No. 38	Sidetrack from	No. 38H AWB at 6033.45 MD

POSITIONAL UNCERTAINTY - Offset Wellbore: No. 20H SHL Offset Wellpath: No. 20H SHL

Slot Surface Uncertainty @1SD	Horizontal	0.100ft	Vertical	0.100ft
Facility Surface Uncertainty @1SD	Horizontal	8.200ft	Vertical	1.000ft

WELLPATH COMPOSITION - Offset Wellbore: No. 20H SHL Offset Wellpath: No. 20H SHL

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	13985.00	ISCWSA MWD, Rev. 2 (Standard)	Pathfinder MWD <85.08-13985>	No. 20H SHL
13985.00	14067.00	Blind Drilling (std)	Projection to bit	No. 20H SHL

OFFSET WELLPATH MD REFERENCE - Offset Wellbore: No. 20H SHL Offset Wellpath: No. 20H SHL

MD Reference: Rig on No. 20H SHL (RT)	Offset TVD & local coordinates use Reference Wellpath settings (See WELLPATH DATUM on page 1 of this report)
Ellipse Start MD	0.00ft



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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 38H SHL
Area	Lea County, NM	Well	No. 38H AWB ST01
Field	(James Federal) Sec 29, TS 23 S, R 32 E	Wellbore	No. 38H PWB ST01
Facility	James Federal No. 38	Sidetrack from	No. 38H AWB at 6033.45 MD

CLEARANCE DATA - Offset Wellbore: No. 39 PWB Offset Wellpath: Rev-B.0

Facility: James 29 Federal 39 Slot: No. 39 SHL Well: No. 39 Threshold Value=1.00 † = interpolated/extrapolated station

Ref MD [ft]	Ref TVD [ft]	Ref North [ft]	Ref East [ft]	Offset MD [ft]	Offset TVD [ft]	Offset North [ft]	Offset East [ft]	Horiz Bearing [°]	C-C Clear Dist [ft]	ACR MASD [ft]	Sep Ratio	ACR Status
6033.45	6032.42	78.30	-50.00	6029.42	6032.42	8.70	859.74	94.38	912.40	63.80	14.30	PASS
6100.00	6098.97	78.79	-50.53	6095.97	6098.97	8.70	859.74	94.40	912.97	64.02	14.26	PASS
6115.00	6113.96	79.08	-50.59	6110.96	6113.96	8.70	859.74	94.42	913.05	64.05	14.25	PASS
6130.00	6128.95	79.76	-50.60	6125.95	6128.95	8.70	859.74	94.46	913.11	64.09	14.25	PASS
6133.45†	6132.39	79.98	-50.60	6129.39	6132.39	8.70	859.74	94.48	913.13	64.10	14.25	PASS
6145.00	6143.91	80.84	-50.61	6140.91	6143.91	8.70	859.74	94.53	913.20	64.13	14.24	PASS
6200.00	6198.70	85.56	-50.67	6195.70	6198.70	8.70	859.74	94.83	913.65	64.26	14.22	PASS
6233.45†	6232.03	88.47	-50.73	6229.03	6232.03	8.70	859.74	95.01	913.96	64.34	14.20	PASS
6333.45†	6331.65	97.19	-50.88	6328.65	6331.65	8.70	859.74	95.55	914.91	64.60	14.16	PASS
6433.45†	6431.27	105.90	-51.03	6428.27	6431.27	8.70	859.74	96.09	915.94	64.86	14.12	PASS
6533.45†	6530.89	114.61	-51.18	6527.89	6530.89	8.70	859.74	96.63	917.06	65.13	14.08	PASS
6633.45†	6630.50	123.33	-51.33	6627.50	6630.50	8.70	859.74	97.17	918.26	65.40	14.04	PASS
6733.45†	6730.12	132.04	-51.49	6727.12	6730.12	8.70	859.74	97.71	919.54	65.69	14.00	PASS
6760.00	6756.57	134.36	-51.53	6753.57	6756.57	8.70	859.74	97.85	919.89	65.77	13.99	PASS
6833.45†	6829.82	139.82	-51.62	6826.82	6829.82	8.70	859.74	98.19	920.75	65.98	13.95	PASS
6933.45†	6929.72	144.23	-51.70	6926.72	6929.72	8.70	859.74	98.46	921.46	66.28	13.90	PASS
7010.00	7006.26	145.26	-51.72	7003.26	7006.26	8.70	859.74	98.52	921.63	66.50	13.86	PASS
7033.45†	7029.71	145.26	-51.72	7026.71	7029.71	8.70	859.74	98.52	921.63	66.56	13.85	PASS
7133.45†	7129.71	145.26	-51.72	7126.71	7129.71	8.70	859.74	98.52	921.63	66.85	13.79	PASS
7233.45†	7229.71	145.26	-51.72	7226.71	7229.71	8.70	859.74	98.52	921.63	67.13	13.73	PASS
7333.45†	7329.71	145.26	-51.72	7326.71	7329.71	8.70	859.74	98.52	921.63	67.43	13.67	PASS
7433.45†	7429.71	145.26	-51.72	7426.71	7429.71	8.70	859.74	98.52	921.63	67.73	13.61	PASS
7533.45†	7529.71	145.26	-51.72	7526.71	7529.71	8.70	859.74	98.52	921.63	68.04	13.55	PASS
7633.45†	7629.71	145.26	-51.72	7626.71	7629.71	8.70	859.74	98.52	921.63	68.35	13.48	PASS
7733.45†	7729.71	145.26	-51.72	7726.71	7729.71	8.70	859.74	98.52	921.63	68.67	13.42	PASS
7833.45†	7829.71	145.26	-51.72	7826.71	7829.71	8.70	859.74	98.52	921.63	68.99	13.36	PASS
7933.45†	7929.71	145.26	-51.72	7926.71	7929.71	8.70	859.74	98.52	921.63	69.32	13.30	PASS
8033.45†	8029.71	145.26	-51.72	8026.71	8029.71	8.70	859.74	98.52	921.63	69.65	13.23	PASS
8133.45†	8129.71	145.26	-51.72	8126.71	8129.71	8.70	859.74	98.52	921.63	69.99	13.17	PASS
8233.45†	8229.71	145.26	-51.72	8226.71	8229.71	8.70	859.74	98.52	921.63	70.34	13.10	PASS
8333.45†	8329.71	145.26	-51.72	8326.71	8329.71	8.70	859.74	98.52	921.63	70.69	13.04	PASS
8433.45†	8429.71	145.26	-51.72	8426.71	8429.71	8.70	859.74	98.52	921.63	71.04	12.97	PASS
8533.45†	8529.71	145.26	-51.72	8526.71	8529.71	8.70	859.74	98.52	921.63	71.40	12.91	PASS
8633.45†	8629.71	145.26	-51.72	8626.71	8629.71	8.70	859.74	98.52	921.63	71.77	12.84	PASS
8733.45†	8729.71	145.26	-51.72	8726.71	8729.71	8.70	859.74	98.52	921.63	72.14	12.78	PASS
8766.74	8763.00	145.26	-51.72	8752.67	8755.67	8.68	859.76	98.52	921.68	72.24	12.76	PASS
8833.45†	8829.58	141.76	-51.74	8781.76	8784.74	7.98	860.49	98.34	923.07	72.34	12.76	PASS
8933.45†	8927.81	123.55	-51.85	8825.02	8827.78	5.07	863.50	97.38	928.39	72.41	12.82	PASS
9033.45†	9021.97	90.20	-52.05	8867.44	8869.58	0.07	868.69	95.59	937.60	72.48	12.94	PASS
9133.45†	9109.76	42.53	-52.33	8908.56	8909.49	-6.79	875.79	93.04	950.76	72.52	13.11	PASS
9233.45†	9189.01	-18.29	-52.69	8947.95	8946.97	-15.19	884.48	89.81	967.93	72.65	13.32	PASS
9333.45†	9257.77	-90.75	-53.13	8985.22	8981.61	-24.73	894.37	86.01	989.13	72.98	13.55	PASS
9433.45†	9314.35	-173.08	-53.62	9019.98	9013.06	-35.01	905.01	81.80	1014.30	73.53	13.79	PASS
9533.45†	9357.35	-263.25	-54.16	9051.88	9041.09	-45.57	915.95	77.35	1043.32	74.38	14.03	PASS
9633.45†	9385.72	-359.03	-54.73	9080.51	9065.51	-55.95	926.70	72.84	1075.91	75.51	14.25	PASS



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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 38H SHL
Area	Lea County, NM	Well	No. 38H AWB ST01
Field	(James Federal) Sec 29, TS 23 S, R 32 E	Wellbore	No. 38H PWB ST01
Facility	James Federal No. 38	Sidetrack from	No. 38H AWB at 6033.45 MD

CLEARANCE DATA - Offset Wellbore: No. 39 PWB Offset Wellpath: Rev-B.0

Facility: James 29 Federal 39 Slot: No. 39 SHL Well: No. 39 Threshold Value=1.00 † = interpolated/extrapolated station

Ref MD [ft]	Ref TVD [ft]	Ref North [ft]	Ref East [ft]	Offset MD [ft]	Offset TVD [ft]	Offset North [ft]	Offset East [ft]	Horiz Bearing [°]	C-C Clear Dist [ft]	ACR MASD [ft]	Sep Ratio	ACR Status
9733.45†	9398.75	-458.07	-55.32	9105.41	9086.13	-65.65	936.74	68.42	1111.72	76.86	14.46	PASS
9766.69	9399.62	-491.29	-55.52	9112.77	9092.11	-68.63	939.83	66.99	1124.25	77.34	14.54	PASS
9833.45†	9399.63	-558.06	-55.92	9127.55	9103.95	-74.77	946.20	64.25	1151.18	78.31	14.70	PASS
9933.45†	9399.64	-658.06	-56.52	9151.68	9122.78	-85.25	957.05	60.53	1196.69	79.81	14.99	PASS
10033.45†	9399.64	-758.05	-57.11	9178.47	9142.93	-97.51	969.74	57.25	1247.66	81.32	15.34	PASS
10133.45†	9399.65	-858.05	-57.71	10074.52	9400.14	-850.53	1217.56	89.66	1275.30	98.29	12.97	PASS
10233.45†	9399.66	-958.05	-58.31	10174.51	9400.14	-950.52	1218.15	89.66	1276.48	102.23	12.49	PASS
10333.45†	9399.67	-1058.05	-58.91	10274.51	9400.13	-1050.51	1218.74	89.66	1277.67	106.40	12.01	PASS
10433.45†	9399.68	-1158.05	-59.50	10374.50	9400.13	-1150.50	1219.33	89.66	1278.86	110.76	11.55	PASS
10533.45†	9399.69	-1258.04	-60.10	10474.49	9400.13	-1250.49	1219.92	89.66	1280.05	115.30	11.10	PASS
10633.45†	9399.70	-1358.04	-60.70	10574.48	9400.12	-1350.48	1220.51	89.66	1281.23	120.00	10.68	PASS
10733.45†	9399.71	-1458.04	-61.29	10674.48	9400.12	-1450.47	1221.10	89.66	1282.42	124.84	10.27	PASS
10833.45†	9399.72	-1558.04	-61.89	10774.47	9400.12	-1550.46	1221.69	89.66	1283.61	129.80	9.89	PASS
10933.45†	9399.73	-1658.04	-62.49	10874.46	9400.11	-1650.46	1222.28	89.66	1284.80	134.87	9.53	PASS
11033.45†	9399.74	-1758.04	-63.09	10974.46	9400.11	-1750.45	1222.87	89.66	1285.98	140.04	9.18	PASS
11133.45†	9399.75	-1858.03	-63.68	11074.45	9400.10	-1850.44	1223.46	89.66	1287.17	145.30	8.86	PASS
11233.45†	9399.75	-1958.03	-64.28	11174.44	9400.10	-1950.43	1224.05	89.66	1288.36	150.64	8.55	PASS
11333.45†	9399.76	-2058.03	-64.88	11274.43	9400.10	-2050.42	1224.64	89.66	1289.55	156.05	8.26	PASS
11433.45†	9399.77	-2158.03	-65.48	11374.43	9400.09	-2150.41	1225.23	89.66	1290.73	161.52	7.99	PASS
11533.45†	9399.78	-2258.03	-66.07	11474.42	9400.09	-2250.40	1225.82	89.66	1291.92	167.06	7.73	PASS
11633.45†	9399.79	-2358.02	-66.67	11574.41	9400.09	-2350.39	1226.41	89.66	1293.11	167.66	7.71	PASS
11733.45†	9399.80	-2458.02	-67.27	11674.41	9400.08	-2450.39	1227.00	89.66	1294.29	178.27	7.26	PASS
11833.45†	9399.81	-2558.02	-67.87	11774.40	9400.08	-2550.38	1227.59	89.66	1295.48	183.95	7.04	PASS
11933.45†	9399.82	-2658.02	-68.46	11874.39	9400.07	-2650.37	1228.18	89.66	1296.67	189.66	6.84	PASS
12033.45†	9399.83	-2758.02	-69.06	11974.39	9400.07	-2750.36	1228.77	89.66	1297.86	195.42	6.64	PASS
12133.45†	9399.84	-2858.02	-69.66	12074.38	9400.07	-2850.35	1229.36	89.66	1299.04	201.20	6.46	PASS
12233.45†	9399.85	-2958.01	-70.26	12174.37	9400.06	-2950.34	1229.95	89.66	1300.23	207.01	6.28	PASS
12333.45†	9399.86	-3058.01	-70.85	12274.36	9400.06	-3050.33	1230.54	89.66	1301.42	212.86	6.11	PASS
12433.45†	9399.87	-3158.01	-71.45	12374.36	9400.06	-3150.32	1231.13	89.66	1302.61	218.72	5.96	PASS
12533.45†	9399.87	-3258.01	-72.05	12474.35	9400.05	-3250.32	1231.72	89.66	1303.79	224.62	5.80	PASS
12633.45†	9399.88	-3358.01	-72.65	12574.34	9400.05	-3350.31	1232.31	89.66	1304.98	230.53	5.66	PASS
12733.45†	9399.89	-3458.01	-73.24	12674.34	9400.04	-3450.30	1232.90	89.66	1306.17	236.46	5.52	PASS
12833.45†	9399.90	-3558.00	-73.84	12774.33	9400.04	-3550.29	1233.49	89.66	1307.36	242.41	5.39	PASS
12933.45†	9399.91	-3658.00	-74.44	12874.32	9400.04	-3650.28	1234.08	89.66	1308.54	248.38	5.27	PASS
13033.45†	9399.92	-3758.00	-75.03	12974.31	9400.03	-3750.27	1234.67	89.66	1309.73	254.37	5.15	PASS
13133.45†	9399.93	-3858.00	-75.63	13074.31	9400.03	-3850.26	1235.26	89.66	1310.92	260.37	5.03	PASS
13233.45†	9399.94	-3958.00	-76.23	13174.30	9400.02	-3950.25	1235.85	89.66	1312.11	266.38	4.93	PASS
13333.45†	9399.95	-4057.99	-76.83	13274.29	9400.02	-4050.24	1236.44	89.66	1313.29	272.41	4.82	PASS
13433.45†	9399.96	-4157.99	-77.42	13374.29	9400.02	-4150.24	1237.03	89.66	1314.48	278.45	4.72	PASS
13533.45†	9399.97	-4257.99	-78.02	13474.28	9400.01	-4250.23	1237.62	89.66	1315.67	284.50	4.62	PASS
13633.45†	9399.98	-4357.99	-78.62	13574.27	9400.01	-4350.22	1238.21	89.66	1316.86	290.56	4.53	PASS
13733.45†	9399.98	-4457.99	-79.22	13674.26	9400.01	-4450.21	1238.80	89.66	1318.04	296.63	4.44	PASS
13833.45†	9399.99	-4557.99	-79.81	13774.26	9400.00	-4550.20	1239.39	89.66	1319.23	302.72	4.36	PASS
13898.69	9400.00	-4623.22	-80.20	13836.18	9400.00	-4612.12	1239.76	89.52	1320.01	306.61	4.31	PASS



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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 38H SHL
Area	Lea County, NM	Well	No. 38H AWB ST01
Field	(James Federal) Sec 29, TS 23 S, R 32 E	Wellbore	No. 38H PWB ST01
Facility	James Federal No. 38	Sidetrack from	No. 38H AWB at 6033.45 MD

POSITIONAL UNCERTAINTY - Offset Wellbore: No. 39 PWB Offset Wellpath: Rev-B.0

Slot Surface Uncertainty @1SD	Horizontal	0.100ft	Vertical	0.100ft
Facility Surface Uncertainty @1SD	Horizontal	8.200ft	Vertical	1.000ft

SURVEY PROGRAM - Offset Wellbore: No. 39 PWB Offset Wellpath: Rev-B.0

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
25.00	13836.18	AT Curve (Short Spaced)		No. 39 PWB

OFFSET WELLPATH MD REFERENCE - Offset Wellbore: No. 39 PWB Offset Wellpath: Rev-B.0

MD Reference: Rig on No. 39 SHL (KB)	Offset TVD & local coordinates use Reference Wellpath settings (See WELLPATH DATUM on page 1 of this report)
Ellipse Start MD	25.00ft



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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 38H SHL
Area	Lea County, NM	Well	No. 38H AWB ST01
Field	(James Federal) Sec 29, TS 23 S, R 32 E	Wellbore	No. 38H PWB ST01
Facility	James Federal No. 38	Sidetrack from	No. 38H AWB at 6033.45 MD

CLEARANCE DATA - Offset Wellbore: No. 22 PWB Offset Wellpath: Rev-B.0

Facility: James Federal No. 22 Slot: No. 22 SHL Well: No. 22 Threshold Value=1.00 † = interpolated/extrapolated station

Ref MD [ft]	Ref TVD [ft]	Ref North [ft]	Ref East [ft]	Offset MD [ft]	Offset TVD [ft]	Offset North [ft]	Offset East [ft]	Horiz Bearing [°]	C-C Clear Dist [ft]	ACR MASD [ft]	Sep Ratio	ACR Status
6033.45	6032.42	78.30	-50.00	6024.19	6022.06	172.81	1715.11	86.94	1767.67	62.11	28.46	PASS
6100.00	6098.97	78.79	-50.53	6091.50	6089.37	172.27	1715.50	86.97	1768.53	62.31	28.38	PASS
6115.00	6113.96	79.08	-50.59	6106.33	6104.19	172.17	1715.59	86.98	1768.66	62.34	28.37	PASS
6130.00	6128.95	79.76	-50.60	6121.14	6119.01	172.09	1715.68	87.01	1768.72	62.36	28.36	PASS
6133.45†	6132.39	79.98	-50.60	6124.54	6122.41	172.07	1715.70	87.02	1768.73	62.37	28.36	PASS
6145.00	6143.91	80.84	-50.61	6135.93	6133.80	172.02	1715.77	87.05	1768.76	62.39	28.35	PASS
6200.00	6198.70	85.56	-50.67	6188.72	6186.58	171.80	1716.10	87.21	1768.92	62.50	28.30	PASS
6233.45†	6232.03	88.47	-50.73	6220.64	6218.50	171.62	1716.35	87.31	1769.08	62.56	28.28	PASS
6333.45†	6331.65	97.19	-50.88	6328.40	6326.26	170.91	1717.02	87.61	1769.44	62.79	28.18	PASS
6433.45†	6431.27	105.90	-51.03	6417.28	6415.14	170.33	1717.55	87.91	1769.83	62.98	28.10	PASS
6533.45†	6530.89	114.61	-51.18	6526.10	6523.95	169.57	1718.35	88.22	1770.40	63.22	28.00	PASS
6633.45†	6630.50	123.33	-51.33	6628.94	6626.78	168.55	1718.70	88.54	1770.62	63.46	27.90	PASS
6733.45†	6730.12	132.04	-51.49	6733.97	6731.81	167.65	1718.74	88.85	1770.58	63.71	27.79	PASS
6760.00	6756.57	134.36	-51.53	6760.18	6758.01	167.45	1718.72	88.93	1770.55	63.77	27.76	PASS
6833.45†	6829.82	139.82	-51.62	6832.85	6830.68	166.87	1718.68	89.13	1770.51	63.95	27.69	PASS
6933.45†	6929.72	144.23	-51.70	6931.61	6929.44	166.17	1718.66	89.29	1770.50	64.19	27.58	PASS
7010.00	7006.26	145.26	-51.72	7007.47	7005.30	165.83	1718.71	89.33	1770.55	64.38	27.50	PASS
7033.45†	7029.71	145.26	-51.72	7031.80	7029.63	165.76	1718.72	89.34	1770.55	64.43	27.48	PASS
7133.45†	7129.71	145.26	-51.72	7137.88	7135.71	165.52	1718.58	89.34	1770.42	64.68	27.37	PASS
7233.45†	7229.71	145.26	-51.72	7257.32	7255.15	164.40	1717.65	89.38	1769.65	64.96	27.24	PASS
7333.45†	7329.71	145.26	-51.72	7353.11	7350.91	162.98	1716.29	89.43	1768.22	65.20	27.12	PASS
7433.45†	7429.71	145.26	-51.72	7440.80	7438.60	162.19	1715.53	89.45	1767.35	65.42	27.01	PASS
7533.45†	7529.71	145.26	-51.72	7559.49	7557.27	160.64	1714.52	89.50	1766.52	65.72	26.88	PASS
7633.45†	7629.71	145.26	-51.72	7654.96	7652.72	159.26	1713.18	89.55	1765.10	65.97	26.76	PASS
7733.45†	7729.71	145.26	-51.72	7762.63	7760.37	158.17	1711.52	89.58	1763.55	66.26	26.62	PASS
7833.45†	7829.71	145.26	-51.72	7864.76	7862.48	156.90	1709.70	89.62	1761.76	66.53	26.48	PASS
7933.45†	7929.71	145.26	-51.72	7964.91	7962.60	155.60	1707.80	89.66	1759.85	66.81	26.34	PASS
8033.45†	8029.71	145.26	-51.72	8060.96	8058.62	154.19	1706.12	89.71	1758.10	67.09	26.21	PASS
8133.45†	8129.71	145.26	-51.72	8158.74	8156.39	152.96	1704.60	89.75	1756.54	67.38	26.07	PASS
8233.45†	8229.71	145.26	-51.72	8254.53	8252.15	151.81	1703.19	89.79	1755.07	67.67	25.94	PASS
8333.45†	8329.71	145.26	-51.72	8349.00	8346.61	150.45	1702.23	89.83	1754.03	67.95	25.81	PASS
8433.45†	8429.71	145.26	-51.72	8447.95	8445.54	148.95	1701.25	89.88	1753.04	68.26	25.68	PASS
8533.45†	8529.71	145.26	-51.72	8540.61	8538.18	147.09	1700.58	89.94	1752.32	68.55	25.56	PASS
8625.00†	8621.26	145.26	-51.72	8624.01	8621.58	145.70	1700.38	89.99	1752.10	68.83	25.46	PASS
8633.45†	8629.71	145.26	-51.72	8631.76	8629.32	145.57	1700.38	89.99	1752.10	68.85	25.45	PASS
8733.45†	8729.71	145.26	-51.72	8724.63	8722.18	144.00	1700.62	90.04	1752.36	69.14	25.34	PASS
8766.74	8763.00	145.26	-51.72	8757.20	8754.75	143.50	1700.76	90.06	1752.50	69.18	25.33	PASS
8833.45†	8829.58	141.76	-51.74	8809.86	8807.37	141.68	1701.15	90.00	1753.03	69.24	25.32	PASS
8933.45†	8927.81	123.55	-51.85	8858.35	8855.50	136.14	1702.34	89.59	1755.72	69.29	25.34	PASS
9033.45†	9021.97	90.20	-52.05	8897.91	8894.35	129.08	1704.64	88.73	1761.74	69.32	25.41	PASS
9133.45†	9109.76	42.53	-52.33	8935.10	8930.38	120.55	1708.12	87.46	1771.28	69.38	25.53	PASS
9233.45†	9189.01	-18.29	-52.69	8974.69	8968.06	109.47	1713.02	85.86	1784.06	69.56	25.65	PASS
9333.45†	9257.77	-90.75	-53.13	9022.52	9012.48	93.36	1720.38	84.07	1799.83	69.94	25.74	PASS
9433.45†	9314.35	-173.08	-53.62	9073.02	9057.83	73.04	1729.30	82.14	1818.01	70.57	25.76	PASS
9533.45†	9357.35	-263.25	-54.16	9127.40	9104.43	47.15	1739.95	80.18	1838.24	71.51	25.71	PASS



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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 38H SHL
Area	Lea County, NM	Well	No. 38H AWB ST01
Field	(James Federal) Sec 29, TS 23 S, R 32 E	Wellbore	No. 38H PWB ST01
Facility	James Federal No. 38	Sidetrack from	No. 38H AWB at 6033.45 MD

CLEARANCE DATA - Offset Wellbore: No. 22 PWB Offset Wellpath: Rev-B.0

Facility: James Federal No. 22 Slot: No. 22 SHL Well: No. 22 Threshold Value=1.00 † = interpolated/extrapolated station

Ref MD [ft]	Ref TVD [ft]	Ref North [ft]	Ref East [ft]	Offset MD [ft]	Offset TVD [ft]	Offset North [ft]	Offset East [ft]	Horiz Bearing [°]	C-C Clear Dist [ft]	ACR MASD [ft]	Sep Ratio	ACR Status
9633.45†	9385.72	-359.03	-54.73	9191.27	9155.04	10.75	1753.72	78.44	1860.23	72.79	25.56	PASS
9733.45†	9398.75	-458.07	-55.32	9242.16	9192.53	-21.60	1765.39	76.52	1883.62	74.30	25.35	PASS
9766.69	9399.62	-491.29	-55.52	9254.75	9201.41	-29.98	1768.44	75.81	1891.80	74.83	25.28	PASS
9833.45†	9399.63	-558.06	-55.92	9280.72	9219.18	-47.74	1775.01	74.43	1909.26	75.95	25.14	PASS
9933.45†	9399.64	-658.06	-56.52	9322.54	9246.24	-77.54	1786.33	72.52	1938.20	77.77	24.92	PASS
10033.45†	9399.64	-758.05	-57.11	10053.84	9458.84	-751.88	1890.10	89.82	1948.12	88.86	21.92	PASS
10133.45†	9399.65	-858.05	-57.71	10155.12	9459.05	-853.15	1890.36	89.86	1948.98	92.82	21.00	PASS
10233.45†	9399.66	-958.05	-58.31	10255.12	9459.04	-953.15	1890.61	89.86	1949.83	97.00	20.10	PASS
10333.45†	9399.67	-1058.05	-58.91	10355.12	9459.04	-1053.15	1890.86	89.86	1950.67	101.40	19.24	PASS
10433.45†	9399.68	-1158.05	-59.50	10455.11	9459.04	-1153.14	1891.11	89.86	1951.52	105.99	18.41	PASS
10533.45†	9399.69	-1258.04	-60.10	10555.11	9459.04	-1253.14	1891.36	89.86	1952.37	110.74	17.63	PASS
10633.45†	9399.70	-1358.04	-60.70	10655.11	9459.04	-1353.13	1891.61	89.86	1953.22	115.64	16.89	PASS
10733.45†	9399.71	-1458.04	-61.29	10755.10	9459.04	-1453.13	1891.86	89.86	1954.07	120.67	16.19	PASS
10833.45†	9399.72	-1558.04	-61.89	10855.10	9459.04	-1553.13	1892.12	89.86	1954.91	125.81	15.54	PASS
10933.45†	9399.73	-1658.04	-62.49	10955.09	9459.04	-1653.12	1892.37	89.86	1955.76	131.05	14.92	PASS
11033.45†	9399.74	-1758.04	-63.09	11055.09	9459.03	-1753.12	1892.62	89.86	1956.61	136.38	14.35	PASS
11133.45†	9399.75	-1858.03	-63.68	11155.09	9459.03	-1853.12	1892.87	89.86	1957.46	141.79	13.81	PASS
11233.45†	9399.75	-1958.03	-64.28	11255.08	9459.03	-1953.11	1893.12	89.86	1958.31	147.27	13.30	PASS
11333.45†	9399.76	-2058.03	-64.88	11355.08	9459.03	-2053.11	1893.37	89.86	1959.16	152.81	12.82	PASS
11433.45†	9399.77	-2158.03	-65.48	11455.08	9459.03	-2153.10	1893.62	89.86	1960.00	158.40	12.37	PASS
11533.45†	9399.78	-2258.03	-66.07	11555.07	9459.03	-2253.10	1893.88	89.86	1960.85	164.04	11.95	PASS
11633.45†	9399.79	-2358.02	-66.67	11655.07	9459.03	-2353.10	1894.13	89.86	1961.70	169.73	11.56	PASS
11733.45†	9399.80	-2458.02	-67.27	11755.07	9459.03	-2453.09	1894.38	89.86	1962.55	175.46	11.18	PASS
11833.45†	9399.81	-2558.02	-67.87	11855.06	9459.03	-2553.09	1894.63	89.86	1963.40	181.23	10.83	PASS
11933.45†	9399.82	-2658.02	-68.46	11955.06	9459.02	-2653.08	1894.88	89.86	1964.24	187.03	10.50	PASS
12033.45†	9399.83	-2758.02	-69.06	12055.05	9459.02	-2753.08	1895.13	89.86	1965.09	192.86	10.19	PASS
12133.45†	9399.84	-2858.02	-69.66	12155.05	9459.02	-2853.08	1895.38	89.86	1965.94	198.72	9.89	PASS
12233.45†	9399.85	-2958.01	-70.26	12255.05	9459.02	-2953.07	1895.64	89.86	1966.79	204.60	9.61	PASS
12333.45†	9399.86	-3058.01	-70.85	12355.04	9459.02	-3053.07	1895.89	89.86	1967.64	210.51	9.35	PASS
12433.45†	9399.87	-3158.01	-71.45	12455.04	9459.02	-3153.06	1896.14	89.86	1968.48	216.43	9.10	PASS
12533.45†	9399.87	-3258.01	-72.05	12555.04	9459.02	-3253.06	1896.39	89.86	1969.33	222.38	8.86	PASS
12633.45†	9399.88	-3358.01	-72.65	12655.03	9459.02	-3353.06	1896.64	89.86	1970.18	228.34	8.63	PASS
12733.45†	9399.89	-3458.01	-73.24	12755.03	9459.01	-3453.05	1896.89	89.86	1971.03	234.33	8.41	PASS
12833.45†	9399.90	-3558.00	-73.84	12855.02	9459.01	-3553.05	1897.14	89.86	1971.88	240.32	8.21	PASS
12933.45†	9399.91	-3658.00	-74.44	12955.02	9459.01	-3653.04	1897.40	89.86	1972.72	246.33	8.01	PASS
13033.45†	9399.92	-3758.00	-75.03	13055.02	9459.01	-3753.04	1897.65	89.86	1973.57	252.36	7.82	PASS
13133.45†	9399.93	-3858.00	-75.63	13155.01	9459.01	-3853.04	1897.90	89.86	1974.42	258.40	7.64	PASS
13233.45†	9399.94	-3958.00	-76.23	13255.01	9459.01	-3953.03	1898.15	89.86	1975.27	264.44	7.47	PASS
13333.45†	9399.95	-4057.99	-76.83	13355.01	9459.01	-4053.03	1898.40	89.86	1976.12	270.50	7.31	PASS
13433.45†	9399.96	-4157.99	-77.42	13455.00	9459.01	-4153.03	1898.65	89.86	1976.97	276.57	7.15	PASS
13533.45†	9399.97	-4257.99	-78.02	13555.00	9459.00	-4253.02	1898.90	89.86	1977.81	282.65	7.00	PASS
13633.45†	9399.98	-4357.99	-78.62	13655.00	9459.00	-4353.02	1899.16	89.86	1978.66	288.74	6.85	PASS
13733.45†	9399.98	-4457.99	-79.22	13754.99	9459.00	-4453.01	1899.41	89.86	1979.51	294.84	6.71	PASS
13833.45†	9399.99	-4557.99	-79.81	13854.99	9459.00	-4553.01	1899.66	89.86	1980.36	300.94	6.58	PASS
13898.69	9400.00	-4623.22	-80.20	13908.20	9459.00	-4606.22	1899.79	89.51	1980.95	304.58	6.50	PASS



Clearance Report

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 38H SHL
Area	Lea County, NM	Well	No. 38H AWB ST01
Field	(James Federal) Sec 29, TS 23 S, R 32 E	Wellbore	No. 38H PWB ST01
Facility	James Federal No. 38	Sidetrack from	No. 38H AWB at 6033.45 MD

POSITIONAL UNCERTAINTY - Offset Wellbore: No. 22 PWB Offset Wellpath: Rev-B.0

Slot Surface Uncertainty @1SD	Horizontal	0.100ft	Vertical	0.100ft
Facility Surface Uncertainty @1SD	Horizontal	8.200ft	Vertical	1.000ft

SURVEY PROGRAM - Offset Wellbore: No. 22 PWB Offset Wellpath: Rev-B.0

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
25.00	8715.00	ISCWSA MWD, Rev. 2 (Standard)		No. 22 AWB
8715.00	9580.00	NaviTrak (Standard)		No. 22 AWB
9580.00	13931.61	NaviTrak (Standard)		No. 22 PWB

OFFSET WELLPATH MD REFERENCE - Offset Wellbore: No. 22 PWB Offset Wellpath: Rev-B.0

MD Reference: Rig on No. 22 SHL (KB)	Offset TVD & local coordinates use Reference Wellpath settings (See WELLPATH DATUM on page 1 of this report)
Ellipse Start MD	25.00ft