

HRM RESOURCES

Location: COLORADO Slot: SLOT#20 ALMA 1S-66-2524-20CDH (287°FSL & 1979°FEL, SEC.25)
Field: ADAMS COUNTY Well: ALMA 1S-66-2524-20CDH
Facility: SEC-25-T1S-R66W Wellbore: ALMA 1S-66-2524-20CDH PWB

Plot reference wellpath is ALMA 1S-66-2524-20CDH PWP (REV-A.0)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (5011), US feet
True vertical depths are referenced to RIG (RKB)	* - Wellpath was transformed from a different geoidetic datum
Measured depths are referenced to RIG (RKB)	North Reference: True north
RIG (RKB) to Mean Sea Level: 5189 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#20 ALMA 1S-66-2524-20CDH (287°FSL & 1979°FEL, SEC.25): 2 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: Ingersoll on 2016-10-17
	Database: WA, DEN, Denver, Datto

Location Information

Facility Name			Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC-25-T1S-R66W			3218416.711	1218223.151	39°55'47.172"N	104°43'16.176"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SLOT#20 ALMA 1S-66-2524-20CDH (287°FSL & 1979°FEL, SEC.25)	-47.36	-134.62	3218282.520	1218174.615	39°55'46.704"N	104°43'17.304"W
RIG (RKB) to Mud line (At Slot: SLOT#20 ALMA 1S-66-2524-20CDH (287°FSL & 1979°FEL, SEC.25)					5191ft	
Mean Sea Level to Mud line (At Slot: SLOT#20 ALMA 1S-66-2524-20CDH (287°FSL & 1979°FEL, SEC.25)					2ft	
RIG (RKB) to Mean Sea Level					5189ft	

Well Profile Data

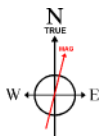
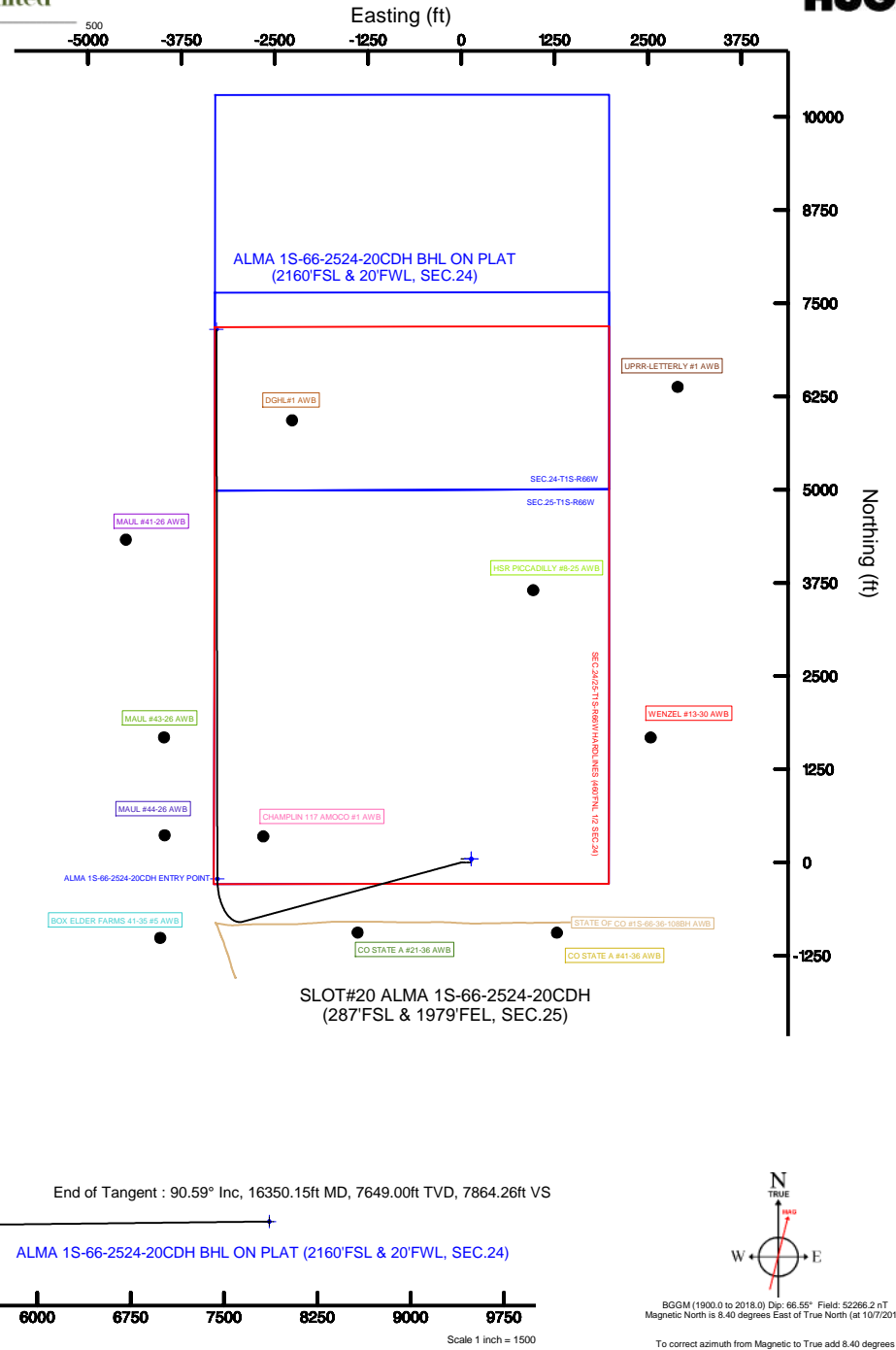
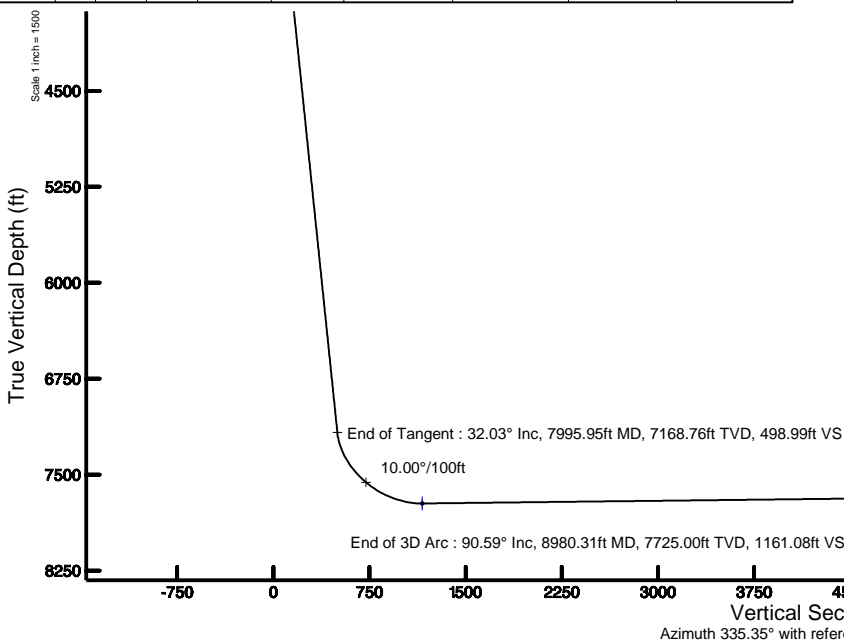
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	14.00	0.000	254.820	14.00	0.00	0.00	0.00	0.00
End of Tangent	1500.00	0.000	254.820	1500.00	0.00	0.00	0.00	0.00
End of Build	3101.49	32.030	254.820	3019.37	-114.19	-420.88	2.00	71.77
End of Tangent	7995.95	32.030	254.820	7168.76	-793.92	-2926.13	0.00	498.99
End of 3D Arc	8980.31	90.591	359.899	7725.00	-222.00	-3267.28	10.00	1161.08
End of Tangent	16350.15	90.591	359.899	7649.00	7147.44	-3280.33	0.00	7864.26

Targets

Name	MD (ft)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC-24-T1S-R66W	-6.00	47.36	134.62	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W	
SEC-24-T1S-R66W SOUTH 1/2 SECTION	-6.00	47.36	134.62	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W	
SEC-25-T1S-R66W	-6.00	47.36	134.62	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W	
ALMA 1S-66-2524-20CDH BHL ON PLAT (2160°FSL & 20°FWL, SEC.24)	10361.15	7649.00	7147.44	-3280.33	3214939.68	1225292.78	39°56'57.336"N	104°44'00.024"W
ALMA 1S-66-2524-20CDH ENTRY POINT	8980.31	7725.00	-222.00	-3267.28	3215017.41	1217923.95	39°55'44.508"N	104°43'59.844"W
SEC-24/25-T1S-R66W HIGHLIGHTS (460°FNL, 1/2 SEC.24)	17794.00	47.36	134.62	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"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
16350.15	90.591	359.899	7649.00	7147.44	-3280.33	3214939.68	1225292.78	39°56'57.336"N	104°44'00.024"W



BGGM (1900.0 to 2018.0) Dip: 66.55° Field: 52266.2 nT
Magnetic North is 8.40 degrees East of True North (at 10/7/2016)
To correct azimuth from Magnetic to True add 8.40 degrees



Resources Limited

Planned Wellpath Report

ALMA 1S-66-2524-20CDH PWP (REV-A.0)

Page 1 of 7



REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#20 ALMA 1S-66-2524-20CDH (287'FSL & 1979'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-20CDH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-20CDH PWB
Facility	SEC.25-T01S-R66W		

REPORT SETUP INFORMATION

Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 5.0
North Reference	True	User	Ingmjmr
Scale	0.999972	Report Generated	10/17/2016 at 9:29:53 AM
Convergence at slot	0.51° East	Database/Source file	WA_DEN_Denver_Defn/ALMA_1S-66-2524-20CDH_PWP__REV-A.0_.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-47.36	-134.62	3218282.52	1218174.62	39°55'46.704"N	104°43'17.904"W
Facility Reference Pt			3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W
Field Reference Pt			3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W

WELLPATH DATUM

Calculation method	Minimum curvature	RIG (RKB) to Facility Vertical Datum	5189.00ft
Horizontal Reference Pt	Slot	RIG (RKB) to Mean Sea Level	5189.00ft
Vertical Reference Pt	RIG (RKB)	RIG (RKB) to Mud Line at Slot (SLOT#20 ALMA 1S-66-2524-20CDH (287'FSL & 1979'FEL, SEC.25))	5191.00ft
MD Reference Pt	RIG (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	335.35°



Resources Limited

Planned Wellpath Report

ALMA 1S-66-2524-20CDH PWP (REV-A.0)

Page 2 of 7

**BAKER
HUGHES****REFERENCE WELLPATH IDENTIFICATION**

Operator	HRM RESOURCES	Slot	SLOT#20 ALMA 1S-66-2524-20CDH (287'FSL & 1979'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-20CDH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-20CDH PWB
Facility	SEC.25-T01S-R66W		

WELLPATH DATA (170 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00†	0.000	254.820	0.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.904"W	0.00	
14.00	0.000	254.820	14.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.904"W	0.00	Tie On
114.00†	0.000	254.820	114.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.904"W	0.00	
214.00†	0.000	254.820	214.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.904"W	0.00	
314.00†	0.000	254.820	314.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.904"W	0.00	
414.00†	0.000	254.820	414.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.904"W	0.00	
514.00†	0.000	254.820	514.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.904"W	0.00	
614.00†	0.000	254.820	614.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.904"W	0.00	
714.00†	0.000	254.820	714.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.904"W	0.00	
814.00†	0.000	254.820	814.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.904"W	0.00	
914.00†	0.000	254.820	914.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.904"W	0.00	
1014.00†	0.000	254.820	1014.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.904"W	0.00	
1114.00†	0.000	254.820	1114.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.904"W	0.00	
1214.00†	0.000	254.820	1214.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.904"W	0.00	
1314.00†	0.000	254.820	1314.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.904"W	0.00	
1414.00†	0.000	254.820	1414.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.904"W	0.00	
1500.00	0.000	254.820	1500.00	0.00	0.00	0.00	39°55'46.704"N	104°43'17.904"W	0.00	End of Tangent
1514.00†	0.280	254.820	1514.00	0.01	-0.01	-0.03	39°55'46.704"N	104°43'17.904"W	2.00	
1614.00†	2.280	254.820	1613.97	0.37	-0.59	-2.19	39°55'46.698"N	104°43'17.932"W	2.00	
1714.00†	4.280	254.820	1713.80	1.31	-2.09	-7.71	39°55'46.683"N	104°43'18.003"W	2.00	
1814.00†	6.280	254.820	1813.37	2.83	-4.50	-16.59	39°55'46.660"N	104°43'18.117"W	2.00	
1914.00†	8.280	254.820	1912.56	4.91	-7.82	-28.82	39°55'46.627"N	104°43'18.274"W	2.00	
2014.00†	10.280	254.820	2011.25	7.57	-12.04	-44.38	39°55'46.585"N	104°43'18.474"W	2.00	
2114.00†	12.280	254.820	2109.31	10.79	-17.16	-63.26	39°55'46.534"N	104°43'18.716"W	2.00	
2214.00†	14.280	254.820	2206.63	14.57	-23.18	-85.43	39°55'46.475"N	104°43'19.001"W	2.00	
2314.00†	16.280	254.820	2303.09	18.91	-30.08	-110.86	39°55'46.407"N	104°43'19.327"W	2.00	
2414.00†	18.280	254.820	2398.57	23.79	-37.86	-139.53	39°55'46.330"N	104°43'19.695"W	2.00	
2514.00†	20.280	254.820	2492.96	29.23	-46.50	-171.39	39°55'46.244"N	104°43'20.104"W	2.00	
2614.00†	22.280	254.820	2586.14	35.20	-56.00	-206.42	39°55'46.151"N	104°43'20.554"W	2.00	
2714.00†	24.280	254.820	2677.99	41.70	-66.35	-244.56	39°55'46.048"N	104°43'21.043"W	2.00	
2814.00†	26.280	254.820	2768.41	48.73	-77.54	-285.77	39°55'45.938"N	104°43'21.572"W	2.00	
2914.00†	28.280	254.820	2857.28	56.28	-89.54	-330.00	39°55'45.819"N	104°43'22.140"W	2.00	
3014.00†	30.280	254.820	2944.50	64.32	-102.34	-377.20	39°55'45.693"N	104°43'22.746"W	2.00	
3101.49	32.030	254.820	3019.37	71.77	-114.19	-420.88	39°55'45.575"N	104°43'23.307"W	2.00	End of Build
3114.00†	32.030	254.820	3029.98	72.86	-115.93	-427.29	39°55'45.558"N	104°43'23.389"W	0.00	
3214.00†	32.030	254.820	3114.75	81.59	-129.82	-478.47	39°55'45.421"N	104°43'24.046"W	0.00	
3314.00†	32.030	254.820	3199.53	90.32	-143.71	-529.66	39°55'45.284"N	104°43'24.703"W	0.00	
3414.00†	32.030	254.820	3284.31	99.05	-157.59	-580.84	39°55'45.147"N	104°43'25.360"W	0.00	
3514.00†	32.030	254.820	3369.08	107.78	-171.48	-632.03	39°55'45.009"N	104°43'26.017"W	0.00	
3614.00†	32.030	254.820	3453.86	116.51	-185.37	-683.21	39°55'44.872"N	104°43'26.674"W	0.00	
3714.00†	32.030	254.820	3538.64	125.24	-199.26	-734.40	39°55'44.735"N	104°43'27.331"W	0.00	
3814.00†	32.030	254.820	3623.42	133.97	-213.15	-785.58	39°55'44.597"N	104°43'27.988"W	0.00	
3914.00†	32.030	254.820	3708.19	142.69	-227.03	-836.77	39°55'44.460"N	104°43'28.645"W	0.00	
4014.00†	32.030	254.820	3792.97	151.42	-240.92	-887.96	39°55'44.323"N	104°43'29.302"W	0.00	
4114.00†	32.030	254.820	3877.75	160.15	-254.81	-939.14	39°55'44.186"N	104°43'29.959"W	0.00	



Resources Limited

Planned Wellpath Report

ALMA 1S-66-2524-20CDH PWP (REV-A.0)

Page 3 of 7

**BAKER
HUGHES****REFERENCE WELLPATH IDENTIFICATION**

Operator	HRM RESOURCES	Slot	SLOT#20 ALMA 1S-66-2524-20CDH (287'FSL & 1979'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-20CDH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-20CDH PWB
Facility	SEC.25-T01S-R66W		

WELLPATH DATA (170 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4214.00†	32.030	254.820	3962.53	168.88	-268.70	-990.33	39°55'44.048"N	104°43'30.616"W	0.00	
4314.00†	32.030	254.820	4047.30	177.61	-282.58	-1041.51	39°55'43.911"N	104°43'31.273"W	0.00	
4414.00†	32.030	254.820	4132.08	186.34	-296.47	-1092.70	39°55'43.774"N	104°43'31.930"W	0.00	
4514.00†	32.030	254.820	4216.86	195.07	-310.36	-1143.88	39°55'43.637"N	104°43'32.587"W	0.00	
4614.00†	32.030	254.820	4301.63	203.79	-324.25	-1195.07	39°55'43.499"N	104°43'33.244"W	0.00	
4714.00†	32.030	254.820	4386.41	212.52	-338.13	-1246.25	39°55'43.362"N	104°43'33.901"W	0.00	
4814.00†	32.030	254.820	4471.19	221.25	-352.02	-1297.44	39°55'43.225"N	104°43'34.558"W	0.00	
4914.00†	32.030	254.820	4555.97	229.98	-365.91	-1348.62	39°55'43.088"N	104°43'35.215"W	0.00	
5014.00†	32.030	254.820	4640.74	238.71	-379.80	-1399.81	39°55'42.950"N	104°43'35.872"W	0.00	
5114.00†	32.030	254.820	4725.52	247.44	-393.68	-1451.00	39°55'42.813"N	104°43'36.529"W	0.00	
5214.00†	32.030	254.820	4810.30	256.17	-407.57	-1502.18	39°55'42.676"N	104°43'37.186"W	0.00	
5314.00†	32.030	254.820	4895.08	264.89	-421.46	-1553.37	39°55'42.538"N	104°43'37.843"W	0.00	
5414.00†	32.030	254.820	4979.85	273.62	-435.35	-1604.55	39°55'42.401"N	104°43'38.500"W	0.00	
5514.00†	32.030	254.820	5064.63	282.35	-449.24	-1655.74	39°55'42.264"N	104°43'39.157"W	0.00	
5614.00†	32.030	254.820	5149.41	291.08	-463.12	-1706.92	39°55'42.127"N	104°43'39.814"W	0.00	
5714.00†	32.030	254.820	5234.19	299.81	-477.01	-1758.11	39°55'41.989"N	104°43'40.471"W	0.00	
5814.00†	32.030	254.820	5318.96	308.54	-490.90	-1809.29	39°55'41.852"N	104°43'41.128"W	0.00	
5914.00†	32.030	254.820	5403.74	317.27	-504.79	-1860.48	39°55'41.715"N	104°43'41.785"W	0.00	
6014.00†	32.030	254.820	5488.52	325.99	-518.67	-1911.66	39°55'41.578"N	104°43'42.443"W	0.00	
6114.00†	32.030	254.820	5573.29	334.72	-532.56	-1962.85	39°55'41.440"N	104°43'43.100"W	0.00	
6214.00†	32.030	254.820	5658.07	343.45	-546.45	-2014.03	39°55'41.303"N	104°43'43.757"W	0.00	
6314.00†	32.030	254.820	5742.85	352.18	-560.34	-2065.22	39°55'41.166"N	104°43'44.414"W	0.00	
6414.00†	32.030	254.820	5827.63	360.91	-574.22	-2116.41	39°55'41.028"N	104°43'45.071"W	0.00	
6514.00†	32.030	254.820	5912.40	369.64	-588.11	-2167.59	39°55'40.891"N	104°43'45.728"W	0.00	
6614.00†	32.030	254.820	5997.18	378.37	-602.00	-2218.78	39°55'40.754"N	104°43'46.385"W	0.00	
6714.00†	32.030	254.820	6081.96	387.09	-615.89	-2269.96	39°55'40.617"N	104°43'47.042"W	0.00	
6814.00†	32.030	254.820	6166.74	395.82	-629.77	-2321.15	39°55'40.479"N	104°43'47.699"W	0.00	
6914.00†	32.030	254.820	6251.51	404.55	-643.66	-2372.33	39°55'40.342"N	104°43'48.356"W	0.00	
7014.00†	32.030	254.820	6336.29	413.28	-657.55	-2423.52	39°55'40.205"N	104°43'49.013"W	0.00	
7114.00†	32.030	254.820	6421.07	422.01	-671.44	-2474.70	39°55'40.067"N	104°43'49.670"W	0.00	
7214.00†	32.030	254.820	6505.84	430.74	-685.33	-2525.89	39°55'39.930"N	104°43'50.327"W	0.00	
7314.00†	32.030	254.820	6590.62	439.47	-699.21	-2577.07	39°55'39.793"N	104°43'50.984"W	0.00	
7414.00†	32.030	254.820	6675.40	448.20	-713.10	-2628.26	39°55'39.655"N	104°43'51.641"W	0.00	
7514.00†	32.030	254.820	6760.18	456.92	-726.99	-2679.45	39°55'39.518"N	104°43'52.298"W	0.00	
7614.00†	32.030	254.820	6844.95	465.65	-740.88	-2730.63	39°55'39.381"N	104°43'52.955"W	0.00	
7714.00†	32.030	254.820	6929.73	474.38	-754.76	-2781.82	39°55'39.244"N	104°43'53.612"W	0.00	
7814.00†	32.030	254.820	7014.51	483.11	-768.65	-2833.00	39°55'39.106"N	104°43'54.269"W	0.00	
7914.00†	32.030	254.820	7099.29	491.84	-782.54	-2884.19	39°55'38.969"N	104°43'54.926"W	0.00	
7995.95	32.030	254.820	7168.76	498.99	-793.92	-2926.13	39°55'38.856"N	104°43'55.464"W	0.00	End of Tangent
8014.00†	31.681	258.176	7184.09	500.83	-796.14	-2935.39	39°55'38.834"N	104°43'55.583"W	10.00	
8114.00†	31.413	277.348	7269.53	520.52	-798.20	-2987.07	39°55'38.814"N	104°43'56.246"W	10.00	
8214.00†	33.907	295.357	7353.91	555.79	-782.88	-3038.25	39°55'38.965"N	104°43'56.903"W	10.00	
8314.00†	38.625	310.318	7434.68	605.57	-750.66	-3087.38	39°55'39.284"N	104°43'57.534"W	10.00	
8414.00†	44.862	322.098	7509.37	668.34	-702.51	-3132.96	39°55'39.760"N	104°43'58.119"W	10.00	
8514.00†	52.060	331.396	7575.72	742.20	-639.90	-3173.61	39°55'40.378"N	104°43'58.641"W	10.00	



Resources Limited

Planned Wellpath Report

ALMA 1S-66-2524-20CDH PWP (REV-A.0)

Page 4 of 7

BAKER
HUGHES

REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#20 ALMA 1S-66-2524-20CDH (287'FSL & 1979'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-20CDH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-20CDH PWB
Facility	SEC.25-T01S-R66W		

WELLPATH DATA (170 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8614.00†	59.856	338.971	7631.71	824.90	-564.73	-3208.09	39°55'41.121"N	104°43'59.084"W	10.00	
8714.00†	68.021	345.407	7675.65	913.93	-479.29	-3235.36	39°55'41.965"N	104°43'59.434"W	10.00	
8814.00†	76.410	351.130	7706.19	1006.59	-386.16	-3254.58	39°55'42.886"N	104°43'59.681"W	10.00	
8914.00†	84.920	356.458	7722.40	1100.05	-288.19	-3265.18	39°55'43.854"N	104°43'59.817"W	10.00	
8980.31	90.591	359.899	7725.00†	1161.08	-222.00	-3267.28	39°55'44.508"N	104°43'59.844"W	10.00	End of 3D Arc
9014.00†	90.591	359.899	7724.65	1191.73	-188.31	-3267.34	39°55'44.841"N	104°43'59.845"W	0.00	
9114.00†	90.591	359.899	7723.62	1282.68	-88.31	-3267.52	39°55'45.829"N	104°43'59.847"W	0.00	
9214.00†	90.591	359.899	7722.59	1373.64	11.68	-3267.70	39°55'46.817"N	104°43'59.850"W	0.00	
9314.00†	90.591	359.899	7721.56	1464.59	111.68	-3267.87	39°55'47.806"N	104°43'59.852"W	0.00	
9414.00†	90.591	359.899	7720.53	1555.54	211.67	-3268.05	39°55'48.794"N	104°43'59.855"W	0.00	
9514.00†	90.591	359.899	7719.50	1646.50	311.66	-3268.23	39°55'49.782"N	104°43'59.857"W	0.00	
9614.00†	90.591	359.899	7718.47	1737.45	411.66	-3268.40	39°55'50.770"N	104°43'59.859"W	0.00	
9714.00†	90.591	359.899	7717.43	1828.41	511.65	-3268.58	39°55'51.758"N	104°43'59.862"W	0.00	
9814.00†	90.591	359.899	7716.40	1919.36	611.65	-3268.76	39°55'52.746"N	104°43'59.864"W	0.00	
9914.00†	90.591	359.899	7715.37	2010.31	711.64	-3268.94	39°55'53.735"N	104°43'59.867"W	0.00	
10014.00†	90.591	359.899	7714.34	2101.27	811.64	-3269.11	39°55'54.723"N	104°43'59.869"W	0.00	
10114.00†	90.591	359.899	7713.31	2192.22	911.63	-3269.29	39°55'55.711"N	104°43'59.872"W	0.00	
10214.00†	90.591	359.899	7712.28	2283.18	1011.63	-3269.47	39°55'56.699"N	104°43'59.874"W	0.00	
10314.00†	90.591	359.899	7711.25	2374.13	1111.62	-3269.64	39°55'57.687"N	104°43'59.877"W	0.00	
10414.00†	90.591	359.899	7710.22	2465.08	1211.62	-3269.82	39°55'58.676"N	104°43'59.879"W	0.00	
10514.00†	90.591	359.899	7709.18	2556.04	1311.61	-3270.00	39°55'59.664"N	104°43'59.881"W	0.00	
10614.00†	90.591	359.899	7708.15	2646.99	1411.60	-3270.18	39°56'00.652"N	104°43'59.884"W	0.00	
10714.00†	90.591	359.899	7707.12	2737.95	1511.60	-3270.35	39°56'01.640"N	104°43'59.886"W	0.00	
10814.00†	90.591	359.899	7706.09	2828.90	1611.59	-3270.53	39°56'02.628"N	104°43'59.889"W	0.00	
10914.00†	90.591	359.899	7705.06	2919.85	1711.59	-3270.71	39°56'03.617"N	104°43'59.891"W	0.00	
11014.00†	90.591	359.899	7704.03	3010.81	1811.58	-3270.88	39°56'04.605"N	104°43'59.894"W	0.00	
11114.00†	90.591	359.899	7703.00	3101.76	1911.58	-3271.06	39°56'05.593"N	104°43'59.896"W	0.00	
11214.00†	90.591	359.899	7701.97	3192.72	2011.57	-3271.24	39°56'06.581"N	104°43'59.899"W	0.00	
11314.00†	90.591	359.899	7700.93	3283.67	2111.57	-3271.41	39°56'07.569"N	104°43'59.901"W	0.00	
11414.00†	90.591	359.899	7699.90	3374.62	2211.56	-3271.59	39°56'08.557"N	104°43'59.903"W	0.00	
11514.00†	90.591	359.899	7698.87	3465.58	2311.55	-3271.77	39°56'09.546"N	104°43'59.906"W	0.00	
11614.00†	90.591	359.899	7697.84	3556.53	2411.55	-3271.95	39°56'10.534"N	104°43'59.908"W	0.00	
11714.00†	90.591	359.899	7696.81	3647.49	2511.54	-3272.12	39°56'11.522"N	104°43'59.911"W	0.00	
11814.00†	90.591	359.899	7695.78	3738.44	2611.54	-3272.30	39°56'12.510"N	104°43'59.913"W	0.00	
11914.00†	90.591	359.899	7694.75	3829.39	2711.53	-3272.48	39°56'13.498"N	104°43'59.916"W	0.00	
12014.00†	90.591	359.899	7693.72	3920.35	2811.53	-3272.65	39°56'14.487"N	104°43'59.918"W	0.00	
12114.00†	90.591	359.899	7692.68	4011.30	2911.52	-3272.83	39°56'15.475"N	104°43'59.921"W	0.00	
12214.00†	90.591	359.899	7691.65	4102.26	3011.52	-3273.01	39°56'16.463"N	104°43'59.923"W	0.00	
12314.00†	90.591	359.899	7690.62	4193.21	3111.51	-3273.19	39°56'17.451"N	104°43'59.925"W	0.00	
12414.00†	90.591	359.899	7689.59	4284.17	3211.51	-3273.36	39°56'18.439"N	104°43'59.928"W	0.00	
12514.00†	90.591	359.899	7688.56	4375.12	3311.50	-3273.54	39°56'19.428"N	104°43'59.930"W	0.00	
12614.00†	90.591	359.899	7687.53	4466.07	3411.49	-3273.72	39°56'20.416"N	104°43'59.933"W	0.00	
12714.00†	90.591	359.899	7686.50	4557.03	3511.49	-3273.89	39°56'21.404"N	104°43'59.935"W	0.00	
12814.00†	90.591	359.899	7685.47	4647.98	3611.48	-3274.07	39°56'22.392"N	104°43'59.938"W	0.00	
12914.00†	90.591	359.899	7684.43	4738.94	3711.48	-3274.25	39°56'23.380"N	104°43'59.940"W	0.00	



Resources Limited

Planned Wellpath Report

ALMA 1S-66-2524-20CDH PWP (REV-A.0)

Page 5 of 7



**BAKER
HUGHES**

REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#20 ALMA 1S-66-2524-20CDH (287'FSL & 1979'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-20CDH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-20CDH PWB
Facility	SEC.25-T01S-R66W		

WELLPATH DATA (170 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
13014.00†	90.591	359.899	7683.40	4829.89	3811.47	-3274.43	39°56'24.369"N	104°43'59.943"W	0.00	
13114.00†	90.591	359.899	7682.37	4920.84	3911.47	-3274.60	39°56'25.357"N	104°43'59.945"W	0.00	
13214.00†	90.591	359.899	7681.34	5011.80	4011.46	-3274.78	39°56'26.345"N	104°43'59.947"W	0.00	
13314.00†	90.591	359.899	7680.31	5102.75	4111.46	-3274.96	39°56'27.333"N	104°43'59.950"W	0.00	
13414.00†	90.591	359.899	7679.28	5193.71	4211.45	-3275.13	39°56'28.321"N	104°43'59.952"W	0.00	
13514.00†	90.591	359.899	7678.25	5284.66	4311.45	-3275.31	39°56'29.309"N	104°43'59.955"W	0.00	
13614.00†	90.591	359.899	7677.22	5375.61	4411.44	-3275.49	39°56'30.298"N	104°43'59.957"W	0.00	
13714.00†	90.591	359.899	7676.18	5466.57	4511.43	-3275.66	39°56'31.286"N	104°43'59.960"W	0.00	
13814.00†	90.591	359.899	7675.15	5557.52	4611.43	-3275.84	39°56'32.274"N	104°43'59.962"W	0.00	
13914.00†	90.591	359.899	7674.12	5648.48	4711.42	-3276.02	39°56'33.262"N	104°43'59.964"W	0.00	
14014.00†	90.591	359.899	7673.09	5739.43	4811.42	-3276.20	39°56'34.250"N	104°43'59.967"W	0.00	
14114.00†	90.591	359.899	7672.06	5830.38	4911.41	-3276.37	39°56'35.239"N	104°43'59.969"W	0.00	
14214.00†	90.591	359.899	7671.03	5921.34	5011.41	-3276.55	39°56'36.227"N	104°43'59.972"W	0.00	
14314.00†	90.591	359.899	7670.00	6012.29	5111.40	-3276.73	39°56'37.215"N	104°43'59.974"W	0.00	
14414.00†	90.591	359.899	7668.97	6103.25	5211.40	-3276.90	39°56'38.203"N	104°43'59.977"W	0.00	
14514.00†	90.591	359.899	7667.93	6194.20	5311.39	-3277.08	39°56'39.191"N	104°43'59.979"W	0.00	
14614.00†	90.591	359.899	7666.90	6285.15	5411.39	-3277.26	39°56'40.180"N	104°43'59.982"W	0.00	
14714.00†	90.591	359.899	7665.87	6376.11	5511.38	-3277.44	39°56'41.168"N	104°43'59.984"W	0.00	
14814.00†	90.591	359.899	7664.84	6467.06	5611.37	-3277.61	39°56'42.156"N	104°43'59.986"W	0.00	
14914.00†	90.591	359.899	7663.81	6558.02	5711.37	-3277.79	39°56'43.144"N	104°43'59.989"W	0.00	
15014.00†	90.591	359.899	7662.78	6648.97	5811.36	-3277.97	39°56'44.132"N	104°43'59.991"W	0.00	
15114.00†	90.591	359.899	7661.75	6739.92	5911.36	-3278.14	39°56'45.120"N	104°43'59.994"W	0.00	
15214.00†	90.591	359.899	7660.72	6830.88	6011.35	-3278.32	39°56'46.109"N	104°43'59.996"W	0.00	
15314.00†	90.591	359.899	7659.69	6921.83	6111.35	-3278.50	39°56'47.097"N	104°43'59.999"W	0.00	
15414.00†	90.591	359.899	7658.65	7012.79	6211.34	-3278.67	39°56'48.085"N	104°44'00.001"W	0.00	
15514.00†	90.591	359.899	7657.62	7103.74	6311.34	-3278.85	39°56'49.073"N	104°44'00.004"W	0.00	
15614.00†	90.591	359.899	7656.59	7194.70	6411.33	-3279.03	39°56'50.061"N	104°44'00.006"W	0.00	
15714.00†	90.591	359.899	7655.56	7285.65	6511.32	-3279.21	39°56'51.050"N	104°44'00.008"W	0.00	
15814.00†	90.591	359.899	7654.53	7376.60	6611.32	-3279.38	39°56'52.038"N	104°44'00.011"W	0.00	
15914.00†	90.591	359.899	7653.50	7467.56	6711.31	-3279.56	39°56'53.026"N	104°44'00.013"W	0.00	
16014.00†	90.591	359.899	7652.47	7558.51	6811.31	-3279.74	39°56'54.014"N	104°44'00.016"W	0.00	
16114.00†	90.591	359.899	7651.44	7649.47	6911.30	-3279.91	39°56'55.002"N	104°44'00.018"W	0.00	
16214.00†	90.591	359.899	7650.40	7740.42	7011.30	-3280.09	39°56'55.991"N	104°44'00.021"W	0.00	
16314.00†	90.591	359.899	7649.37	7831.37	7111.29	-3280.27	39°56'56.979"N	104°44'00.023"W	0.00	
16350.15	90.591	359.899	7649.00 ²	7864.26	7147.44	-3280.33	39°56'57.336"N	104°44'00.024"W	0.00	End of Tangent



Resources Limited

Planned Wellpath Report

ALMA 1S-66-2524-20CDH PWP (REV-A.0)

Page 6 of 7

BAKER
HUGHES

REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#20 ALMA 1S-66-2524-20CDH (287'FSL & 1979'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-20CDH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-20CDH PWB
Facility	SEC.25-T01S-R66W		

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.24-T1S-R66W		-6.00	47.36	134.62	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W	polygon
SEC.24-T1S-R66W SOUTH 1/2 SECTION		-6.00	47.36	134.62	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W	polygon
SEC.25-T1S-R66W		-6.00	47.36	134.62	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W	polygon
2) ALMA 1S-66-2524-20CDH BHL ON PLAT (2160'FSL & 20'FWL, SEC.24)	16350.15	7649.00	7147.44	-3280.33	3214939.68	1225292.78	39°56'57.336"N	104°44'00.024"W	point
1) ALMA 1S-66-2524-20CDH ENTRY POINT	8980.31	7725.00	-222.00	-3267.28	3215017.41	1217923.95	39°55'44.508"N	104°43'59.844"W	point
SEC.24/25-T1S-R66W HARDLINES (460'FNL 1/2 SEC.24)		7794.00	47.36	134.62	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W	polygon

SURVEY PROGRAM -

Ref Wellbore: ALMA 1S-66-2524-20CDH PWB Ref Wellpath: ALMA 1S-66-2524-20CDH PWP (REV-A.0)

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
14.00	16350.15	Custom BHI AutoTrak Curve (Axial Corr, Short spacing) (Rockies 0.03Gt model)		ALMA 1S-66- 2524-20CDH PWB



Resources Limited

Planned Wellpath Report

ALMA 1S-66-2524-20CDH PWP (REV-A.0)

Page 7 of 7



**BAKER
HUGHES**

REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#20 ALMA 1S-66-2524-20CDH (287'FSL & 1979'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-20CDH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-20CDH PWB
Facility	SEC.25-T01S-R66W		

DESIGN COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
14.00	0.000	254.820	14.00	Tie On
1500.00	0.000	254.820	1500.00	End of Tangent
3101.49	32.030	254.820	3019.37	End of Build
7995.95	32.030	254.820	7168.76	End of Tangent
8980.31	90.591	359.899	7725.00	End of 3D Arc
16350.15	90.591	359.899	7649.00	End of Tangent