

HRM RESOURCES

Location: COLORADO Slot: SLOT#14 ALMA 1S-66-2524-14CDH (287°FSL & 1889°FEL, SEC.25)
Field: ADAMS COUNTY Well: ALMA 1S-66-2524-14CDH
Facility: SEC-25-T01S-R66W Wellbore: ALMA 1S-66-2524-14CDH PWB

Plot reference wellpath is ALMA 1S-66-2524-14CDH 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: 5195 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#14 ALMA 1S-66-2524-14CDH (287°FSL & 1889°FEL, SEC.25): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: Ingersoll on 2016-10-14
	Database: WA, DEN, Denver, Datto

Location Information

Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC-25-T01S-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)
SLOT#14 ALMA 1S-66-2524-14CDH (287°FSL & 1889°FEL, SEC.25)	47.36	-44.87	3218372.258	1218175.403
RIG (RKB) to Mud line (At Slot: SLOT#14 ALMA 1S-66-2524-14CDH (287°FSL & 1889°FEL, SEC.25)				5195R
Mean Sea Level to Mud line (At Slot: SLOT#14 ALMA 1S-66-2524-14CDH (287°FSL & 1889°FEL, SEC.25)				0R
RIG (RKB) to Mean Sea Level				5196R

Well Profile Data

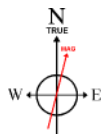
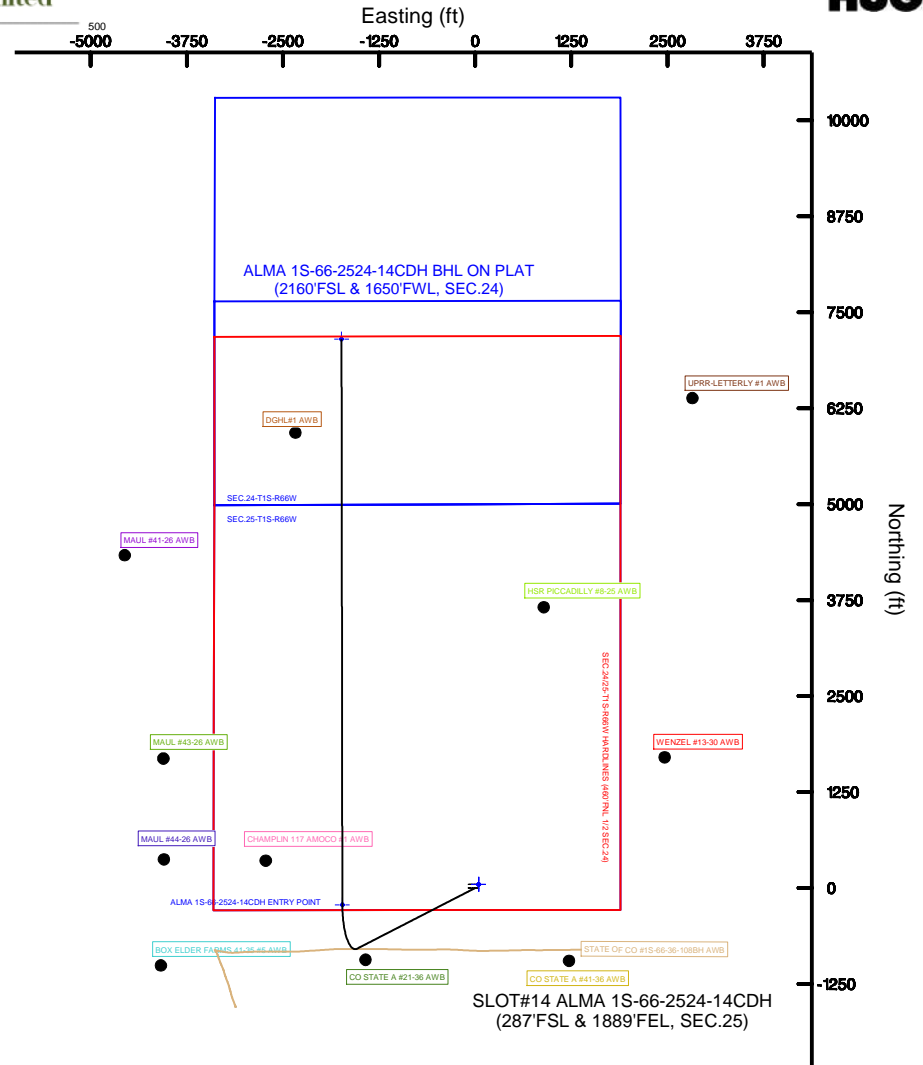
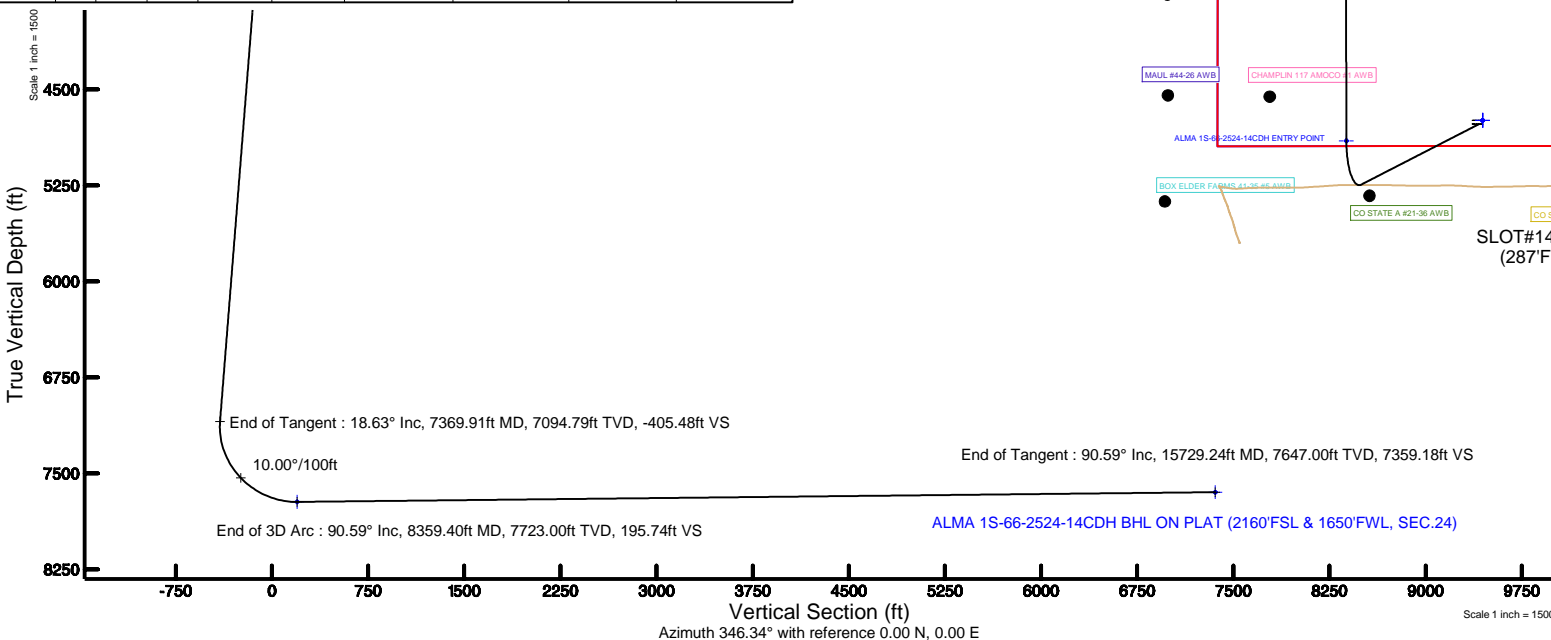
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	14.00	0.000	242.764	14.00	0.00	0.00	0.00	0.00
End of Tangent	1500.00	0.000	242.764	1500.00	0.00	0.00	0.00	0.00
End of Build	2431.55	18.631	242.764	2415.22	-68.71	-133.48	2.00	-35.23
End of Tangent	7369.91	18.631	242.764	7094.79	-790.72	-1536.23	0.00	-405.48
End of 3D Arc	8359.40	90.591	359.917	7723.00	-218.51	-1727.59	10.00	195.74
End of Tangent	15729.24	15729.24	90.591	359.917	7647.00	7150.93	-1738.30	7359.18

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		0.00	47.36	44.87	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W
SEC-24-T1S-R66W SOUTH 1/2 SECTION		0.00	47.36	44.87	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W
SEC-25-T1S-R66W		0.00	47.36	44.87	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W
ALMA 1S-66-2524-14CDH BHL ON PLAT (2160°FSL & 1650°FEL, SEC.24)	15729.24	7647.00	7150.93	-1738.30	3216571.29	1225310.58	39°56'57.372"N	104°43'39.072"W
ALMA 1S-66-2524-14CDH ENTRY POINT	8359.40	7723.00	-218.51	-1727.59	3218846.70	1217941.74	39°55'44.544"N	104°43'38.508"W
SEC-24/25-T1S-R66W PARALLELS (400'N, 1/2 SEC.24)		7600.00	47.36	44.87	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
15729.24	90.591	359.917	7647.00	7150.93	-1738.30	3216571.29	1225310.58	39°56'57.372"N	104°43'39.072"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

Scale 1 inch = 1500



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Planned Wellpath Report

ALMA 1S-66-2524-14CDH PWP (REV-A.0)

Page 1 of 7



REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#14 ALMA 1S-66-2524-14CDH (287'FSL & 1889'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-14CDH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-14CDH 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 8:47:40 AM
Convergence at slot	0.51° East	Database/Source file	WA_DEN_Denver_Defn/ALMA_1S-66-2524-14CDH_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	-44.87	3218372.26	1218175.40	39°55'46.704"N	104°43'16.752"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	5195.00ft
Horizontal Reference Pt	Slot	RIG (RKB) to Mean Sea Level	5195.00ft
Vertical Reference Pt	RIG (RKB)	RIG (RKB) to Mud Line at Slot (SLOT#14 ALMA 1S-66-2524-14CDH (287'FSL & 1889'FEL, SEC.25))	5195.00ft
MD Reference Pt	RIG (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	346.34°



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Planned Wellpath Report

ALMA 1S-66-2524-14CDH PWP (REV-A.0)

Page 2 of 7



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REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#14 ALMA 1S-66-2524-14CDH (287'FSL & 1889'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-14CDH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-14CDH PWB
Facility	SEC.25-T01S-R66W		

WELLPATH DATA (164 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	242.764	0.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.752"W	0.00	
14.00	0.000	242.764	14.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.752"W	0.00	Tie On
114.00†	0.000	242.764	114.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.752"W	0.00	
214.00†	0.000	242.764	214.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.752"W	0.00	
314.00†	0.000	242.764	314.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.752"W	0.00	
414.00†	0.000	242.764	414.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.752"W	0.00	
514.00†	0.000	242.764	514.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.752"W	0.00	
614.00†	0.000	242.764	614.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.752"W	0.00	
714.00†	0.000	242.764	714.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.752"W	0.00	
814.00†	0.000	242.764	814.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.752"W	0.00	
914.00†	0.000	242.764	914.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.752"W	0.00	
1014.00†	0.000	242.764	1014.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.752"W	0.00	
1114.00†	0.000	242.764	1114.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.752"W	0.00	
1214.00†	0.000	242.764	1214.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.752"W	0.00	
1314.00†	0.000	242.764	1314.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.752"W	0.00	
1414.00†	0.000	242.764	1414.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.752"W	0.00	
1500.00	0.000	242.764	1500.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.752"W	0.00	End of Tangent
1514.00†	0.280	242.764	1514.00	-0.01	-0.02	-0.03	39°55'46.704"N	104°43'16.752"W	2.00	
1614.00†	2.280	242.764	1613.97	-0.53	-1.04	-2.02	39°55'46.694"N	104°43'16.778"W	2.00	
1714.00†	4.280	242.764	1713.80	-1.87	-3.66	-7.10	39°55'46.668"N	104°43'16.843"W	2.00	
1814.00†	6.280	242.764	1813.37	-4.03	-7.87	-15.29	39°55'46.626"N	104°43'16.948"W	2.00	
1914.00†	8.280	242.764	1912.56	-7.01	-13.67	-26.55	39°55'46.569"N	104°43'17.093"W	2.00	
2014.00†	10.280	242.764	2011.25	-10.79	-21.05	-40.89	39°55'46.496"N	104°43'17.277"W	2.00	
2114.00†	12.280	242.764	2109.31	-15.38	-30.00	-58.28	39°55'46.408"N	104°43'17.500"W	2.00	
2214.00†	14.280	242.764	2206.63	-20.77	-40.51	-78.70	39°55'46.304"N	104°43'17.762"W	2.00	
2314.00†	16.280	242.764	2303.09	-26.96	-52.57	-102.13	39°55'46.184"N	104°43'18.063"W	2.00	
2414.00†	18.280	242.764	2398.57	-33.93	-66.16	-128.54	39°55'46.050"N	104°43'18.402"W	2.00	
2431.55	18.631	242.764	2415.22	-35.23	-68.71	-133.48	39°55'46.025"N	104°43'18.465"W	2.00	End of Build
2514.00†	18.631	242.764	2493.35	-41.41	-80.76	-156.90	39°55'45.906"N	104°43'18.766"W	0.00	
2614.00†	18.631	242.764	2588.11	-48.91	-95.38	-185.31	39°55'45.761"N	104°43'19.131"W	0.00	
2714.00†	18.631	242.764	2682.87	-56.41	-110.00	-213.71	39°55'45.617"N	104°43'19.495"W	0.00	
2814.00†	18.631	242.764	2777.63	-63.91	-124.62	-242.12	39°55'45.472"N	104°43'19.860"W	0.00	
2914.00†	18.631	242.764	2872.39	-71.40	-139.24	-270.52	39°55'45.328"N	104°43'20.225"W	0.00	
3014.00†	18.631	242.764	2967.15	-78.90	-153.86	-298.93	39°55'45.183"N	104°43'20.589"W	0.00	
3114.00†	18.631	242.764	3061.91	-86.40	-168.48	-327.33	39°55'45.039"N	104°43'20.954"W	0.00	
3214.00†	18.631	242.764	3156.67	-93.89	-183.10	-355.74	39°55'44.894"N	104°43'21.318"W	0.00	
3314.00†	18.631	242.764	3251.43	-101.39	-197.73	-384.14	39°55'44.750"N	104°43'21.683"W	0.00	
3414.00†	18.631	242.764	3346.19	-108.89	-212.35	-412.55	39°55'44.605"N	104°43'22.048"W	0.00	
3514.00†	18.631	242.764	3440.95	-116.39	-226.97	-440.96	39°55'44.461"N	104°43'22.412"W	0.00	
3614.00†	18.631	242.764	3535.70	-123.88	-241.59	-469.36	39°55'44.316"N	104°43'22.777"W	0.00	
3714.00†	18.631	242.764	3630.46	-131.38	-256.21	-497.77	39°55'44.172"N	104°43'23.141"W	0.00	
3814.00†	18.631	242.764	3725.22	-138.88	-270.83	-526.17	39°55'44.027"N	104°43'23.506"W	0.00	
3914.00†	18.631	242.764	3819.98	-146.38	-285.45	-554.58	39°55'43.883"N	104°43'23.871"W	0.00	
4014.00†	18.631	242.764	3914.74	-153.87	-300.07	-582.98	39°55'43.739"N	104°43'24.235"W	0.00	
4114.00†	18.631	242.764	4009.50	-161.37	-314.69	-611.39	39°55'43.594"N	104°43'24.600"W	0.00	



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Planned Wellpath Report

ALMA 1S-66-2524-14CDH PWP (REV-A.0)

Page 3 of 7



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REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#14 ALMA 1S-66-2524-14CDH (287'FSL & 1889'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-14CDH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-14CDH PWB
Facility	SEC.25-T01S-R66W		

WELLPATH DATA (164 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4214.00†	18.631	242.764	4104.26	-168.87	-329.31	-639.79	39°55'43.450"N	104°43'24.965"W	0.00	
4314.00†	18.631	242.764	4199.02	-176.37	-343.93	-668.20	39°55'43.305"N	104°43'25.329"W	0.00	
4414.00†	18.631	242.764	4293.78	-183.86	-358.55	-696.60	39°55'43.161"N	104°43'25.694"W	0.00	
4514.00†	18.631	242.764	4388.54	-191.36	-373.17	-725.01	39°55'43.016"N	104°43'26.058"W	0.00	
4614.00†	18.631	242.764	4483.30	-198.86	-387.79	-753.41	39°55'42.872"N	104°43'26.423"W	0.00	
4714.00†	18.631	242.764	4578.06	-206.35	-402.41	-781.82	39°55'42.727"N	104°43'26.788"W	0.00	
4814.00†	18.631	242.764	4672.82	-213.85	-417.03	-810.22	39°55'42.583"N	104°43'27.152"W	0.00	
4914.00†	18.631	242.764	4767.58	-221.35	-431.65	-838.63	39°55'42.438"N	104°43'27.517"W	0.00	
5014.00†	18.631	242.764	4862.34	-228.85	-446.28	-867.03	39°55'42.294"N	104°43'27.881"W	0.00	
5114.00†	18.631	242.764	4957.10	-236.34	-460.90	-895.44	39°55'42.149"N	104°43'28.246"W	0.00	
5214.00†	18.631	242.764	5051.86	-243.84	-475.52	-923.84	39°55'42.005"N	104°43'28.611"W	0.00	
5314.00†	18.631	242.764	5146.62	-251.34	-490.14	-952.25	39°55'41.860"N	104°43'28.975"W	0.00	
5414.00†	18.631	242.764	5241.38	-258.84	-504.76	-980.65	39°55'41.716"N	104°43'29.340"W	0.00	
5514.00†	18.631	242.764	5336.14	-266.33	-519.38	-1009.06	39°55'41.571"N	104°43'29.704"W	0.00	
5614.00†	18.631	242.764	5430.90	-273.83	-534.00	-1037.46	39°55'41.427"N	104°43'30.069"W	0.00	
5714.00†	18.631	242.764	5525.66	-281.33	-548.62	-1065.87	39°55'41.282"N	104°43'30.434"W	0.00	
5814.00†	18.631	242.764	5620.42	-288.83	-563.24	-1094.28	39°55'41.138"N	104°43'30.798"W	0.00	
5914.00†	18.631	242.764	5715.18	-296.32	-577.86	-1122.68	39°55'40.993"N	104°43'31.163"W	0.00	
6014.00†	18.631	242.764	5809.94	-303.82	-592.48	-1151.09	39°55'40.849"N	104°43'31.528"W	0.00	
6114.00†	18.631	242.764	5904.69	-311.32	-607.10	-1179.49	39°55'40.704"N	104°43'31.892"W	0.00	
6214.00†	18.631	242.764	5999.45	-318.82	-621.72	-1207.90	39°55'40.560"N	104°43'32.257"W	0.00	
6314.00†	18.631	242.764	6094.21	-326.31	-636.34	-1236.30	39°55'40.415"N	104°43'32.621"W	0.00	
6414.00†	18.631	242.764	6188.97	-333.81	-650.96	-1264.71	39°55'40.271"N	104°43'32.986"W	0.00	
6514.00†	18.631	242.764	6283.73	-341.31	-665.58	-1293.11	39°55'40.126"N	104°43'33.351"W	0.00	
6614.00†	18.631	242.764	6378.49	-348.80	-680.21	-1321.52	39°55'39.982"N	104°43'33.715"W	0.00	
6714.00†	18.631	242.764	6473.25	-356.30	-694.83	-1349.92	39°55'39.837"N	104°43'34.080"W	0.00	
6814.00†	18.631	242.764	6568.01	-363.80	-709.45	-1378.33	39°55'39.693"N	104°43'34.444"W	0.00	
6914.00†	18.631	242.764	6662.77	-371.30	-724.07	-1406.73	39°55'39.548"N	104°43'34.809"W	0.00	
7014.00†	18.631	242.764	6757.53	-378.79	-738.69	-1435.14	39°55'39.404"N	104°43'35.174"W	0.00	
7114.00†	18.631	242.764	6852.29	-386.29	-753.31	-1463.54	39°55'39.259"N	104°43'35.538"W	0.00	
7214.00†	18.631	242.764	6947.05	-393.79	-767.93	-1491.95	39°55'39.115"N	104°43'35.903"W	0.00	
7314.00†	18.631	242.764	7041.81	-401.29	-782.55	-1520.35	39°55'38.970"N	104°43'36.267"W	0.00	
7369.91	18.631	242.764	7094.79	-405.48	-790.72	-1536.23	39°55'38.889"N	104°43'36.471"W	0.00	End of Tangent
7414.00†	17.165	256.334	7136.76	-407.13	-795.49	-1548.82	39°55'38.842"N	104°43'36.633"W	10.00	
7514.00†	17.764	290.042	7232.40	-398.65	-793.74	-1577.57	39°55'38.859"N	104°43'37.002"W	10.00	
7614.00†	23.037	314.783	7326.26	-373.44	-774.68	-1605.86	39°55'39.048"N	104°43'37.365"W	10.00	
7714.00†	30.659	329.285	7415.51	-332.29	-738.89	-1632.84	39°55'39.401"N	104°43'37.711"W	10.00	
7814.00†	39.282	338.188	7497.43	-276.44	-687.45	-1657.68	39°55'39.910"N	104°43'38.030"W	10.00	
7914.00†	48.367	344.249	7569.54	-207.58	-621.92	-1679.65	39°55'40.557"N	104°43'38.312"W	10.00	
8014.00†	57.692	348.786	7629.63	-127.81	-544.30	-1698.06	39°55'41.324"N	104°43'38.549"W	10.00	
8114.00†	67.147	352.465	7675.89	-39.55	-456.95	-1712.35	39°55'42.188"N	104°43'38.732"W	10.00	
8214.00†	76.677	355.659	7706.91	54.51	-362.52	-1722.10	39°55'43.121"N	104°43'38.857"W	10.00	
8314.00†	86.243	358.609	7721.75	151.52	-263.88	-1727.01	39°55'44.096"N	104°43'38.920"W	10.00	
8359.40	90.591	359.917	7723.00†	195.74	-218.51	-1727.59	39°55'44.544"N	104°43'38.928"W	10.00	End of 3D Arc
8414.00†	90.591	359.917	7722.44	248.81	-163.91	-1727.67	39°55'45.084"N	104°43'38.929"W	0.00	



Resources Limited

Planned Wellpath Report

ALMA 1S-66-2524-14CDH PWP (REV-A.0)

Page 4 of 7

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

Operator	HRM RESOURCES	Slot	SLOT#14 ALMA 1S-66-2524-14CDH (287'FSL & 1889'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-14CDH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-14CDH PWB
Facility	SEC.25-T01S-R66W		

WELLPATH DATA (164 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8514.00†	90.591	359.917	7721.41	346.01	-63.92	-1727.82	39°55'46.072"N	104°43'38.931"W	0.00	
8614.00†	90.591	359.917	7720.37	443.21	36.07	-1727.96	39°55'47.060"N	104°43'38.933"W	0.00	
8714.00†	90.591	359.917	7719.34	540.41	136.07	-1728.11	39°55'48.048"N	104°43'38.935"W	0.00	
8814.00†	90.591	359.917	7718.31	637.61	236.06	-1728.25	39°55'49.036"N	104°43'38.937"W	0.00	
8914.00†	90.591	359.917	7717.28	734.81	336.06	-1728.40	39°55'50.024"N	104°43'38.939"W	0.00	
9014.00†	90.591	359.917	7716.25	832.01	436.05	-1728.54	39°55'51.013"N	104°43'38.941"W	0.00	
9114.00†	90.591	359.917	7715.22	929.21	536.05	-1728.69	39°55'52.001"N	104°43'38.943"W	0.00	
9214.00†	90.591	359.917	7714.19	1026.41	636.04	-1728.83	39°55'52.989"N	104°43'38.945"W	0.00	
9314.00†	90.591	359.917	7713.16	1123.61	736.04	-1728.98	39°55'53.977"N	104°43'38.947"W	0.00	
9414.00†	90.591	359.917	7712.12	1220.81	836.03	-1729.12	39°55'54.965"N	104°43'38.949"W	0.00	
9514.00†	90.591	359.917	7711.09	1318.01	936.03	-1729.27	39°55'55.954"N	104°43'38.951"W	0.00	
9614.00†	90.591	359.917	7710.06	1415.21	1036.02	-1729.41	39°55'56.942"N	104°43'38.953"W	0.00	
9714.00†	90.591	359.917	7709.03	1512.40	1136.02	-1729.56	39°55'57.930"N	104°43'38.954"W	0.00	
9814.00†	90.591	359.917	7708.00	1609.60	1236.01	-1729.71	39°55'58.918"N	104°43'38.956"W	0.00	
9914.00†	90.591	359.917	7706.97	1706.80	1336.00	-1729.85	39°55'59.906"N	104°43'38.958"W	0.00	
10014.00†	90.591	359.917	7705.94	1804.00	1436.00	-1730.00	39°56'00.895"N	104°43'38.960"W	0.00	
10114.00†	90.591	359.917	7704.91	1901.20	1535.99	-1730.14	39°56'01.883"N	104°43'38.962"W	0.00	
10214.00†	90.591	359.917	7703.87	1998.40	1635.99	-1730.29	39°56'02.871"N	104°43'38.964"W	0.00	
10314.00†	90.591	359.917	7702.84	2095.60	1735.98	-1730.43	39°56'03.859"N	104°43'38.966"W	0.00	
10414.00†	90.591	359.917	7701.81	2192.80	1835.98	-1730.58	39°56'04.847"N	104°43'38.968"W	0.00	
10514.00†	90.591	359.917	7700.78	2290.00	1935.97	-1730.72	39°56'05.836"N	104°43'38.970"W	0.00	
10614.00†	90.591	359.917	7699.75	2387.20	2035.97	-1730.87	39°56'06.824"N	104°43'38.972"W	0.00	
10714.00†	90.591	359.917	7698.72	2484.40	2135.96	-1731.01	39°56'07.812"N	104°43'38.974"W	0.00	
10814.00†	90.591	359.917	7697.69	2581.60	2235.96	-1731.16	39°56'08.800"N	104°43'38.976"W	0.00	
10914.00†	90.591	359.917	7696.66	2678.80	2335.95	-1731.30	39°56'09.788"N	104°43'38.978"W	0.00	
11014.00†	90.591	359.917	7695.62	2776.00	2435.94	-1731.45	39°56'10.776"N	104°43'38.980"W	0.00	
11114.00†	90.591	359.917	7694.59	2873.19	2535.94	-1731.59	39°56'11.765"N	104°43'38.982"W	0.00	
11214.00†	90.591	359.917	7693.56	2970.39	2635.93	-1731.74	39°56'12.753"N	104°43'38.984"W	0.00	
11314.00†	90.591	359.917	7692.53	3067.59	2735.93	-1731.88	39°56'13.741"N	104°43'38.986"W	0.00	
11414.00†	90.591	359.917	7691.50	3164.79	2835.92	-1732.03	39°56'14.729"N	104°43'38.988"W	0.00	
11514.00†	90.591	359.917	7690.47	3261.99	2935.92	-1732.17	39°56'15.717"N	104°43'38.990"W	0.00	
11614.00†	90.591	359.917	7689.44	3359.19	3035.91	-1732.32	39°56'16.706"N	104°43'38.992"W	0.00	
11714.00†	90.591	359.917	7688.41	3456.39	3135.91	-1732.46	39°56'17.694"N	104°43'38.994"W	0.00	
11814.00†	90.591	359.917	7687.38	3553.59	3235.90	-1732.61	39°56'18.682"N	104°43'38.995"W	0.00	
11914.00†	90.591	359.917	7686.34	3650.79	3335.90	-1732.75	39°56'19.670"N	104°43'38.997"W	0.00	
12014.00†	90.591	359.917	7685.31	3747.99	3435.89	-1732.90	39°56'20.658"N	104°43'38.999"W	0.00	
12114.00†	90.591	359.917	7684.28	3845.19	3535.89	-1733.05	39°56'21.647"N	104°43'39.001"W	0.00	
12214.00†	90.591	359.917	7683.25	3942.39	3635.88	-1733.19	39°56'22.635"N	104°43'39.003"W	0.00	
12314.00†	90.591	359.917	7682.22	4039.59	3735.87	-1733.34	39°56'23.623"N	104°43'39.005"W	0.00	
12414.00†	90.591	359.917	7681.19	4136.79	3835.87	-1733.48	39°56'24.611"N	104°43'39.007"W	0.00	
12514.00†	90.591	359.917	7680.16	4233.98	3935.86	-1733.63	39°56'25.599"N	104°43'39.009"W	0.00	
12614.00†	90.591	359.917	7679.13	4331.18	4035.86	-1733.77	39°56'26.588"N	104°43'39.011"W	0.00	
12714.00†	90.591	359.917	7678.09	4428.38	4135.85	-1733.92	39°56'27.576"N	104°43'39.013"W	0.00	
12814.00†	90.591	359.917	7677.06	4525.58	4235.85	-1734.06	39°56'28.564"N	104°43'39.015"W	0.00	
12914.00†	90.591	359.917	7676.03	4622.78	4335.84	-1734.21	39°56'29.552"N	104°43'39.017"W	0.00	



Resources Limited

Planned Wellpath Report

ALMA 1S-66-2524-14CDH PWP (REV-A.0)

Page 5 of 7



REFERENCE WELLPATH IDENTIFICATION			
Operator	HRM RESOURCES	Slot	SLOT#14 ALMA 1S-66-2524-14CDH (287'FSL & 1889'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-14CDH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-14CDH PWB
Facility	SEC.25-T01S-R66W		

WELLPATH DATA (164 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	359.917	7675.00	4719.98	4435.84	-1734.35	39°56'30.540"N	104°43'39.019"W	0.00	
13114.00†	90.591	359.917	7673.97	4817.18	4535.83	-1734.50	39°56'31.528"N	104°43'39.021"W	0.00	
13214.00†	90.591	359.917	7672.94	4914.38	4635.83	-1734.64	39°56'32.517"N	104°43'39.023"W	0.00	
13314.00†	90.591	359.917	7671.91	5011.58	4735.82	-1734.79	39°56'33.505"N	104°43'39.025"W	0.00	
13414.00†	90.591	359.917	7670.88	5108.78	4835.81	-1734.93	39°56'34.493"N	104°43'39.027"W	0.00	
13514.00†	90.591	359.917	7669.84	5205.98	4935.81	-1735.08	39°56'35.481"N	104°43'39.029"W	0.00	
13614.00†	90.591	359.917	7668.81	5303.18	5035.80	-1735.22	39°56'36.469"N	104°43'39.031"W	0.00	
13714.00†	90.591	359.917	7667.78	5400.38	5135.80	-1735.37	39°56'37.458"N	104°43'39.033"W	0.00	
13814.00†	90.591	359.917	7666.75	5497.58	5235.79	-1735.51	39°56'38.446"N	104°43'39.035"W	0.00	
13914.00†	90.591	359.917	7665.72	5594.77	5335.79	-1735.66	39°56'39.434"N	104°43'39.037"W	0.00	
14014.00†	90.591	359.917	7664.69	5691.97	5435.78	-1735.80	39°56'40.422"N	104°43'39.038"W	0.00	
14114.00†	90.591	359.917	7663.66	5789.17	5535.78	-1735.95	39°56'41.410"N	104°43'39.040"W	0.00	
14214.00†	90.591	359.917	7662.63	5886.37	5635.77	-1736.10	39°56'42.399"N	104°43'39.042"W	0.00	
14314.00†	90.591	359.917	7661.59	5983.57	5735.77	-1736.24	39°56'43.387"N	104°43'39.044"W	0.00	
14414.00†	90.591	359.917	7660.56	6080.77	5835.76	-1736.39	39°56'44.375"N	104°43'39.046"W	0.00	
14514.00†	90.591	359.917	7659.53	6177.97	5935.76	-1736.53	39°56'45.363"N	104°43'39.048"W	0.00	
14614.00†	90.591	359.917	7658.50	6275.17	6035.75	-1736.68	39°56'46.351"N	104°43'39.050"W	0.00	
14714.00†	90.591	359.917	7657.47	6372.37	6135.74	-1736.82	39°56'47.339"N	104°43'39.052"W	0.00	
14814.00†	90.591	359.917	7656.44	6469.57	6235.74	-1736.97	39°56'48.328"N	104°43'39.054"W	0.00	
14914.00†	90.591	359.917	7655.41	6566.77	6335.73	-1737.11	39°56'49.316"N	104°43'39.056"W	0.00	
15014.00†	90.591	359.917	7654.38	6663.97	6435.73	-1737.26	39°56'50.304"N	104°43'39.058"W	0.00	
15114.00†	90.591	359.917	7653.34	6761.17	6535.72	-1737.40	39°56'51.292"N	104°43'39.060"W	0.00	
15214.00†	90.591	359.917	7652.31	6858.37	6635.72	-1737.55	39°56'52.280"N	104°43'39.062"W	0.00	
15314.00†	90.591	359.917	7651.28	6955.56	6735.71	-1737.69	39°56'53.269"N	104°43'39.064"W	0.00	
15414.00†	90.591	359.917	7650.25	7052.76	6835.71	-1737.84	39°56'54.257"N	104°43'39.066"W	0.00	
15514.00†	90.591	359.917	7649.22	7149.96	6935.70	-1737.98	39°56'55.245"N	104°43'39.068"W	0.00	
15614.00†	90.591	359.917	7648.19	7247.16	7035.70	-1738.13	39°56'56.233"N	104°43'39.070"W	0.00	
15714.00†	90.591	359.917	7647.16	7344.36	7135.69	-1738.27	39°56'57.221"N	104°43'39.072"W	0.00	
15729.24	90.591	359.917	7647.00 ²	7359.18	7150.93	-1738.30	39°56'57.372"N	104°43'39.072"W	0.00	End of Tangent



Resources Limited

Planned Wellpath Report

ALMA 1S-66-2524-14CDH PWP (REV-A.0)

Page 6 of 7



REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#14 ALMA 1S-66-2524-14CDH (287'FSL & 1889'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-14CDH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-14CDH 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		0.00	47.36	44.87	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W	polygon
SEC.24-T1S-R66W SOUTH 1/2 SECTION		0.00	47.36	44.87	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W	polygon
SEC.25-T1S-R66W		0.00	47.36	44.87	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W	polygon
2) ALMA 1S-66-2524-14CDH BHL ON PLAT (2160'FSL & 1650'FWL, SEC.24)	15729.24	7647.00	7150.93	-1738.30	3216571.29	1225310.58	39°56'57.372"N	104°43'39.072"W	point
1) ALMA 1S-66-2524-14CDH ENTRY POINT	8359.40	7723.00	-218.51	-1727.59	3216646.70	1217941.74	39°55'44.544"N	104°43'38.928"W	point
SEC.24/25-T1S-R66W HARDLINES (460'FNL 1/2 SEC.24)		7800.00	47.36	44.87	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W	polygon

SURVEY PROGRAM -

Ref Wellbore: ALMA 1S-66-2524-14CDH PWB Ref Wellpath: ALMA 1S-66-2524-14CDH PWP (REV-A.0)

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
14.00	15729.24	Custom BHI AutoTrak Curve (Axial Corr, Short spacing) (Rockies 0.03Gt model)		ALMA 1S-66- 2524-14CDH PWB



Resources Limited

Planned Wellpath Report

ALMA 1S-66-2524-14CDH PWP (REV-A.0)

Page 7 of 7



**BAKER
HUGHES**

REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#14 ALMA 1S-66-2524-14CDH (287'FSL & 1889'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-14CDH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-14CDH PWB
Facility	SEC.25-T01S-R66W		

DESIGN COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
14.00	0.000	242.764	14.00	Tie On
1500.00	0.000	242.764	1500.00	End of Tangent
2431.55	18.631	242.764	2415.22	End of Build
7369.91	18.631	242.764	7094.79	End of Tangent
8359.40	90.591	359.917	7723.00	End of 3D Arc
15729.24	90.591	359.917	7647.00	End of Tangent