

HRM RESOURCES

Location: COLORADO Slot: SLOT#11 ALMA 1S-66-2524-11NH (287°FSL & 1844°FEL, SEC.25)
Field: ADAMS COUNTY Well: ALMA 1S-66-2524-11NH
Facility: SEC.25-T01S-R66W Wellbore: ALMA 1S-66-2524-11NH PWB

Plot reference wellpath is ALMA 1S-66-2524-11NH 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 geodetic datum
Measured depths are referenced to RIG (RKB)	North Reference: True north
RIG (RKB) to Mean Sea Level: 5196 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#11 ALMA 1S-66-2524-11NH (287°FSL & 1844°FEL, SEC.25)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: Ingreem on 2016-10-14
	Database: WA_DEN_Denver_Data

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)	Latitude	Longitude
SLOT#11 ALMA 1S-66-2524-11NH (287°FSL & 1844°FEL, SEC.25)	47.36	-0.00	3218417.127	1218175.797	39°55'46.704"N	104°43'16.176"W
RIG (RKB) to Mud line (At Slot: SLOT#11 ALMA 1S-66-2524-11NH (287°FSL & 1844°FEL, SEC.25))					5196ft	
Mean Sea Level to Mud line (At Slot: SLOT#11 ALMA 1S-66-2524-11NH (287°FSL & 1844°FEL, SEC.25))					0ft	
RIG (RKB) to Mean Sea Level					5196ft	

Well Profile Data

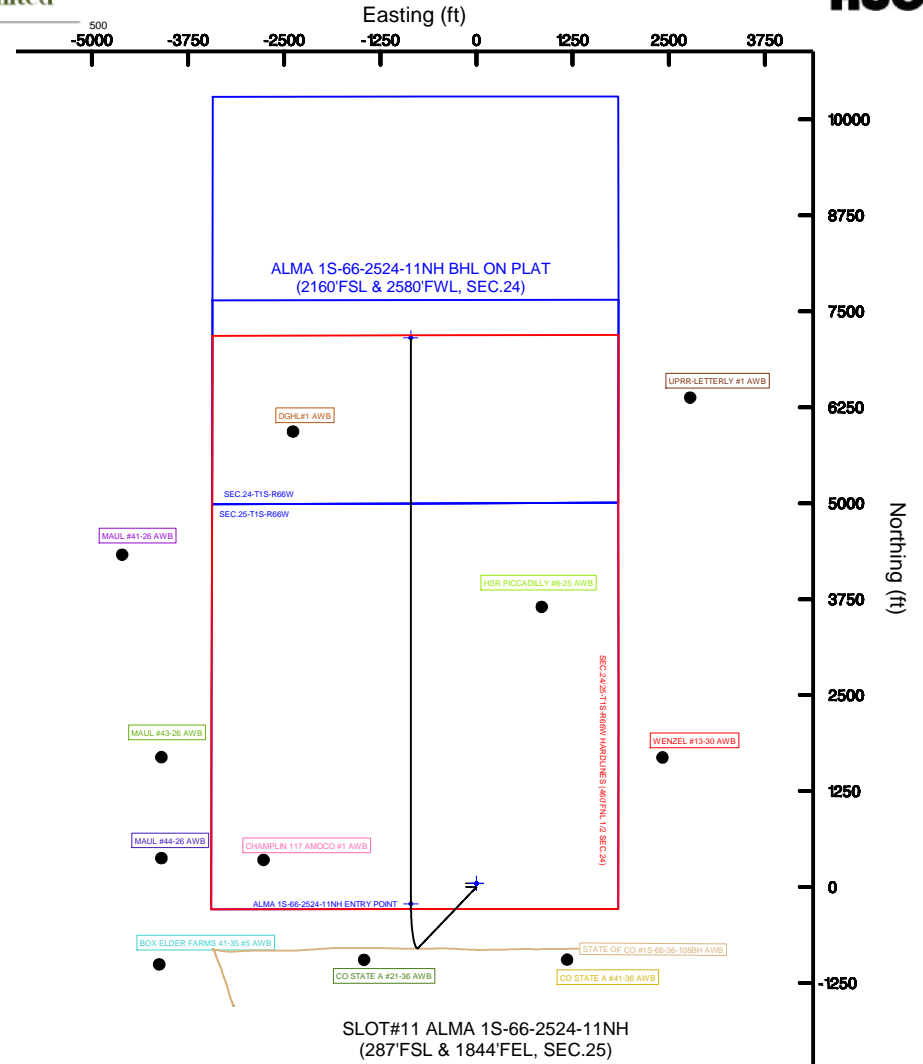
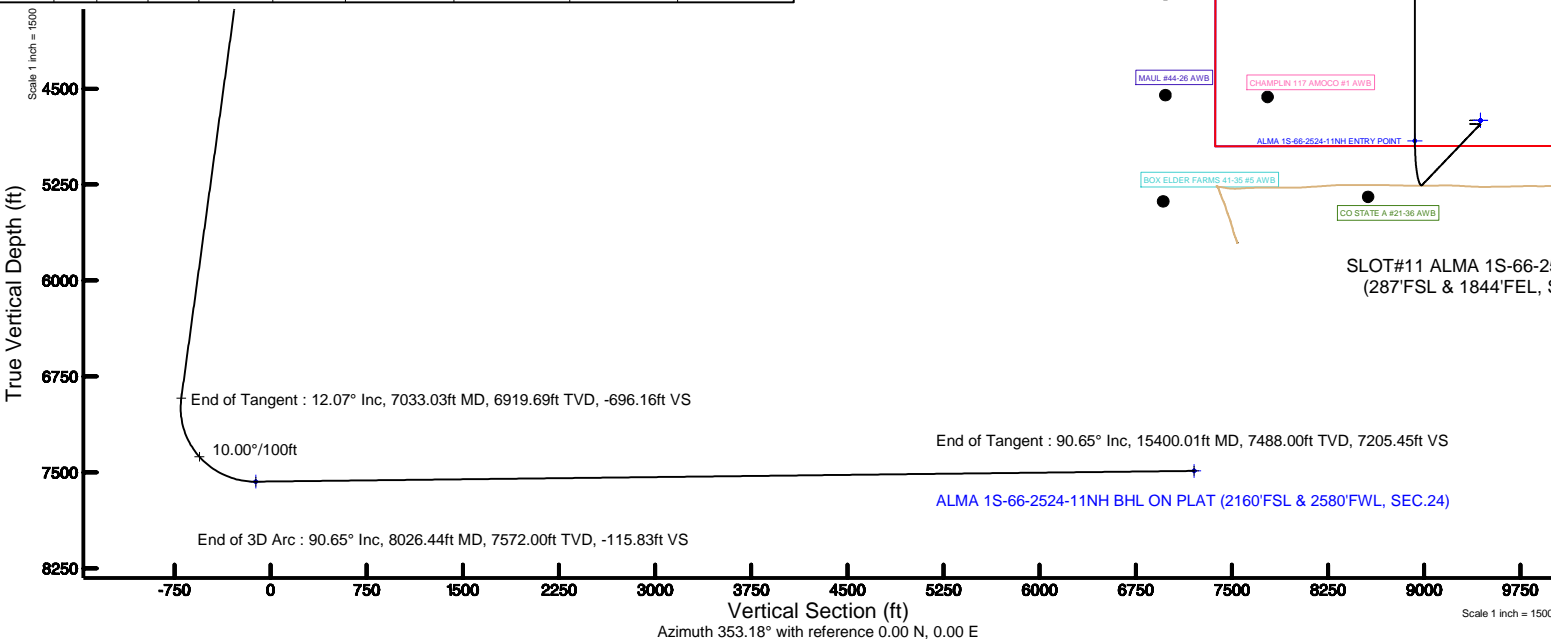
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	14.00	0.000	223.652	14.00	0.00	0.00	0.00	0.00
End of Tangent	1500.00	0.000	223.652	1500.00	0.00	0.00	0.00	0.00
End of Build	2103.25	12.065	223.652	2098.80	-45.79	-43.68	2.00	-40.28
End of Tangent	7033.03	12.065	223.652	6919.69	-791.35	-754.97	0.00	-696.16
End of 3D Arc	8026.44	90.653	359.980	7572.00	-218.55	-852.58	10.00	-115.83
End of Tangent	15400.01	90.653	359.980	7488.00	7154.53	-855.13	0.00	7205.45

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		1.00	47.36	0.00	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W
SEC.24-T1S-R66W SOUTH 1/2 SECTION		1.00	47.36	0.00	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W
SEC.25-T1S-R66W		1.00	47.36	0.00	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W
ALMA 1S-66-2524-11NH BHL ON PLAT (2160°FSL & 2580°FEL, SEC.24)	15400.01	7488.00	7154.53	-855.13	3217499.22	1225322.33	39°56'57.408"N	104°43'27.156"W
ALMA 1S-66-2524-11NH ENTRY POINT	8026.44	7572.00	-218.55	-852.58	3217588.53	1217949.77	39°55'44.544"N	104°43'27.120"W
SEC.24-25-T1S-R66W HIGHLIGHTS (400°FNL, 1/2 SEC.24)		7801.00	47.36	0.00	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
15400.01	90.653	359.980	7488.00	7154.53	-855.13	3217499.22	1225322.33	39°56'57.408"N	104°43'27.156"W



BGM (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-66-2524-11NH PWP (REV-A.0)

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REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#11 ALMA 1S-66-2524-11NH (287'FSL & 1844'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-11NH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-11NH 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 8:29:57 AM
Convergence at slot	0.51° East	Database/Source file	WA_DEN_Denver_Defn/ALMA_1S-66-2524-11NH_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	-0.00	3218417.13	1218175.80	39°55'46.704"N	104°43'16.176"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	5196.00ft
Horizontal Reference Pt	Slot	RIG (RKB) to Mean Sea Level	5196.00ft
Vertical Reference Pt	RIG (RKB)	RIG (RKB) to Mud Line at Slot (SLOT#11 ALMA 1S-66-2524-11NH (287'FSL & 1844'FEL, SEC.25))	5196.00ft
MD Reference Pt	RIG (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	353.18°



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REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#11 ALMA 1S-66-2524-11NH (287'FSL & 1844'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-11NH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-11NH PWB
Facility	SEC.25-T01S-R66W		

WELLPATH DATA (160 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	223.652	0.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.176"W	0.00	
14.00	0.000	223.652	14.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.176"W	0.00	Tie On
114.00†	0.000	223.652	114.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.176"W	0.00	
214.00†	0.000	223.652	214.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.176"W	0.00	
314.00†	0.000	223.652	314.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.176"W	0.00	
414.00†	0.000	223.652	414.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.176"W	0.00	
514.00†	0.000	223.652	514.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.176"W	0.00	
614.00†	0.000	223.652	614.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.176"W	0.00	
714.00†	0.000	223.652	714.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.176"W	0.00	
814.00†	0.000	223.652	814.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.176"W	0.00	
914.00†	0.000	223.652	914.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.176"W	0.00	
1014.00†	0.000	223.652	1014.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.176"W	0.00	
1114.00†	0.000	223.652	1114.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.176"W	0.00	
1214.00†	0.000	223.652	1214.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.176"W	0.00	
1314.00†	0.000	223.652	1314.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.176"W	0.00	
1414.00†	0.000	223.652	1414.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.176"W	0.00	
1500.00	0.000	223.652	1500.00	0.00	0.00	0.00	39°55'46.704"N	104°43'16.176"W	0.00	End of Tangent
1514.00†	0.280	223.652	1514.00	-0.02	-0.02	-0.02	39°55'46.704"N	104°43'16.176"W	2.00	
1614.00†	2.280	223.652	1613.97	-1.44	-1.64	-1.57	39°55'46.688"N	104°43'16.196"W	2.00	
1714.00†	4.280	223.652	1713.80	-5.09	-5.78	-5.51	39°55'46.647"N	104°43'16.247"W	2.00	
1814.00†	6.280	223.652	1813.37	-10.94	-12.44	-11.87	39°55'46.581"N	104°43'16.328"W	2.00	
1914.00†	8.280	223.652	1912.56	-19.01	-21.61	-20.61	39°55'46.490"N	104°43'16.441"W	2.00	
2014.00†	10.280	223.652	2011.25	-29.27	-33.27	-31.74	39°55'46.375"N	104°43'16.583"W	2.00	
2103.25	12.065	223.652	2098.80	-40.28	-45.79	-43.68	39°55'46.252"N	104°43'16.737"W	2.00	End of Build
2114.00†	12.065	223.652	2109.31	-41.71	-47.41	-45.23	39°55'46.235"N	104°43'16.757"W	0.00	
2214.00†	12.065	223.652	2207.11	-55.01	-62.54	-59.66	39°55'46.086"N	104°43'16.942"W	0.00	
2314.00†	12.065	223.652	2304.90	-68.32	-77.66	-74.09	39°55'45.937"N	104°43'17.127"W	0.00	
2414.00†	12.065	223.652	2402.69	-81.62	-92.78	-88.52	39°55'45.787"N	104°43'17.312"W	0.00	
2514.00†	12.065	223.652	2500.48	-94.93	-107.91	-102.95	39°55'45.638"N	104°43'17.497"W	0.00	
2614.00†	12.065	223.652	2598.27	-108.23	-123.03	-117.37	39°55'45.488"N	104°43'17.683"W	0.00	
2714.00†	12.065	223.652	2696.06	-121.54	-138.15	-131.80	39°55'45.339"N	104°43'17.868"W	0.00	
2814.00†	12.065	223.652	2793.85	-134.84	-153.28	-146.23	39°55'45.189"N	104°43'18.053"W	0.00	
2914.00†	12.065	223.652	2891.64	-148.14	-168.40	-160.66	39°55'45.040"N	104°43'18.238"W	0.00	
3014.00†	12.065	223.652	2989.43	-161.45	-183.52	-175.09	39°55'44.890"N	104°43'18.423"W	0.00	
3114.00†	12.065	223.652	3087.23	-174.75	-198.65	-189.52	39°55'44.741"N	104°43'18.609"W	0.00	
3214.00†	12.065	223.652	3185.02	-188.06	-213.77	-203.94	39°55'44.591"N	104°43'18.794"W	0.00	
3314.00†	12.065	223.652	3282.81	-201.36	-228.90	-218.37	39°55'44.442"N	104°43'18.979"W	0.00	
3414.00†	12.065	223.652	3380.60	-214.67	-244.02	-232.80	39°55'44.292"N	104°43'19.164"W	0.00	
3514.00†	12.065	223.652	3478.39	-227.97	-259.14	-247.23	39°55'44.143"N	104°43'19.350"W	0.00	
3614.00†	12.065	223.652	3576.18	-241.28	-274.27	-261.66	39°55'43.994"N	104°43'19.535"W	0.00	
3714.00†	12.065	223.652	3673.97	-254.58	-289.39	-276.09	39°55'43.844"N	104°43'19.720"W	0.00	
3814.00†	12.065	223.652	3771.76	-267.88	-304.51	-290.51	39°55'43.695"N	104°43'19.905"W	0.00	
3914.00†	12.065	223.652	3869.55	-281.19	-319.64	-304.94	39°55'43.545"N	104°43'20.090"W	0.00	
4014.00†	12.065	223.652	3967.35	-294.49	-334.76	-319.37	39°55'43.396"N	104°43'20.276"W	0.00	
4114.00†	12.065	223.652	4065.14	-307.80	-349.88	-333.80	39°55'43.246"N	104°43'20.461"W	0.00	



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Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#11 ALMA 1S-66-2524-11NH (287'FSL & 1844'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-11NH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-11NH PWB
Facility	SEC.25-T01S-R66W		

WELLPATH DATA (160 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4214.00†	12.065	223.652	4162.93	-321.10	-365.01	-348.23	39°55'43.097"N	104°43'20.646"W	0.00	
4314.00†	12.065	223.652	4260.72	-334.41	-380.13	-362.66	39°55'42.947"N	104°43'20.831"W	0.00	
4414.00†	12.065	223.652	4358.51	-347.71	-395.26	-377.08	39°55'42.798"N	104°43'21.016"W	0.00	
4514.00†	12.065	223.652	4456.30	-361.02	-410.38	-391.51	39°55'42.648"N	104°43'21.202"W	0.00	
4614.00†	12.065	223.652	4554.09	-374.32	-425.50	-405.94	39°55'42.499"N	104°43'21.387"W	0.00	
4714.00†	12.065	223.652	4651.88	-387.62	-440.63	-420.37	39°55'42.349"N	104°43'21.572"W	0.00	
4814.00†	12.065	223.652	4749.67	-400.93	-455.75	-434.80	39°55'42.200"N	104°43'21.757"W	0.00	
4914.00†	12.065	223.652	4847.46	-414.23	-470.87	-449.23	39°55'42.051"N	104°43'21.942"W	0.00	
5014.00†	12.065	223.652	4945.26	-427.54	-486.00	-463.65	39°55'41.901"N	104°43'22.128"W	0.00	
5114.00†	12.065	223.652	5043.05	-440.84	-501.12	-478.08	39°55'41.752"N	104°43'22.313"W	0.00	
5214.00†	12.065	223.652	5140.84	-454.15	-516.25	-492.51	39°55'41.602"N	104°43'22.498"W	0.00	
5314.00†	12.065	223.652	5238.63	-467.45	-531.37	-506.94	39°55'41.453"N	104°43'22.683"W	0.00	
5414.00†	12.065	223.652	5336.42	-480.76	-546.49	-521.37	39°55'41.303"N	104°43'22.868"W	0.00	
5514.00†	12.065	223.652	5434.21	-494.06	-561.62	-535.80	39°55'41.154"N	104°43'23.054"W	0.00	
5614.00†	12.065	223.652	5532.00	-507.36	-576.74	-550.22	39°55'41.004"N	104°43'23.239"W	0.00	
5714.00†	12.065	223.652	5629.79	-520.67	-591.86	-564.65	39°55'40.855"N	104°43'23.424"W	0.00	
5814.00†	12.065	223.652	5727.58	-533.97	-606.99	-579.08	39°55'40.705"N	104°43'23.609"W	0.00	
5914.00†	12.065	223.652	5825.38	-547.28	-622.11	-593.51	39°55'40.556"N	104°43'23.794"W	0.00	
6014.00†	12.065	223.652	5923.17	-560.58	-637.23	-607.94	39°55'40.406"N	104°43'23.980"W	0.00	
6114.00†	12.065	223.652	6020.96	-573.89	-652.36	-622.37	39°55'40.257"N	104°43'24.165"W	0.00	
6214.00†	12.065	223.652	6118.75	-587.19	-667.48	-636.79	39°55'40.108"N	104°43'24.350"W	0.00	
6314.00†	12.065	223.652	6216.54	-600.50	-682.61	-651.22	39°55'39.958"N	104°43'24.535"W	0.00	
6414.00†	12.065	223.652	6314.33	-613.80	-697.73	-665.65	39°55'39.809"N	104°43'24.720"W	0.00	
6514.00†	12.065	223.652	6412.12	-627.10	-712.85	-680.08	39°55'39.659"N	104°43'24.906"W	0.00	
6614.00†	12.065	223.652	6509.91	-640.41	-727.98	-694.51	39°55'39.510"N	104°43'25.091"W	0.00	
6714.00†	12.065	223.652	6607.70	-653.71	-743.10	-708.94	39°55'39.360"N	104°43'25.276"W	0.00	
6814.00†	12.065	223.652	6705.50	-667.02	-758.22	-723.36	39°55'39.211"N	104°43'25.461"W	0.00	
6914.00†	12.065	223.652	6803.29	-680.32	-773.35	-737.79	39°55'39.061"N	104°43'25.646"W	0.00	
7014.00†	12.065	223.652	6901.08	-693.63	-788.47	-752.22	39°55'38.912"N	104°43'25.832"W	0.00	
7033.03	12.065	223.652	6919.69	-696.16	-791.35	-754.97	39°55'38.883"N	104°43'25.867"W	0.00	End of Tangent
7114.00†	8.431	265.893	6999.46	-701.27	-797.91	-766.75	39°55'38.819"N	104°43'26.018"W	10.00	
7214.00†	12.600	318.470	7097.96	-691.94	-790.25	-781.33	39°55'38.894"N	104°43'26.205"W	10.00	
7314.00†	21.094	337.346	7193.65	-665.59	-765.41	-795.53	39°55'39.140"N	104°43'26.387"W	10.00	
7414.00†	30.490	345.341	7283.62	-623.04	-724.16	-808.91	39°55'39.547"N	104°43'26.559"W	10.00	
7514.00†	40.159	349.792	7365.12	-565.57	-667.74	-821.08	39°55'40.105"N	104°43'26.715"W	10.00	
7614.00†	49.941	352.742	7435.69	-494.94	-597.86	-831.65	39°55'40.796"N	104°43'26.851"W	10.00	
7714.00†	59.779	354.943	7493.18	-413.28	-516.66	-840.32	39°55'41.598"N	104°43'26.963"W	10.00	
7814.00†	69.647	356.739	7535.85	-323.08	-426.59	-846.81	39°55'42.488"N	104°43'27.046"W	10.00	
7914.00†	79.530	358.318	7562.39	-227.07	-330.40	-850.93	39°55'43.439"N	104°43'27.099"W	10.00	
8014.00†	89.422	359.798	7572.01	-128.19	-231.00	-852.55	39°55'44.421"N	104°43'27.120"W	10.00	
8026.44	90.653	359.980	7572.00†	-115.83	-218.55	-852.58	39°55'44.544"N	104°43'27.120"W	10.00	End of 3D Arc
8114.00†	90.653	359.980	7571.00	-28.89	-131.01	-852.61	39°55'45.409"N	104°43'27.120"W	0.00	
8214.00†	90.653	359.980	7569.86	70.40	-31.01	-852.64	39°55'46.397"N	104°43'27.121"W	0.00	
8314.00†	90.653	359.980	7568.72	169.69	68.98	-852.68	39°55'47.386"N	104°43'27.121"W	0.00	
8414.00†	90.653	359.980	7567.58	268.98	168.98	-852.71	39°55'48.374"N	104°43'27.122"W	0.00	



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REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#11 ALMA 1S-66-2524-11NH (287'FSL & 1844'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-11NH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-11NH PWB
Facility	SEC.25-T01S-R66W		

WELLPATH DATA (160 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8514.00†	90.653	359.980	7566.45	368.27	268.97	-852.75	39°55'49.362"N	104°43'27.122"W	0.00	
8614.00†	90.653	359.980	7565.31	467.56	368.96	-852.78	39°55'50.350"N	104°43'27.123"W	0.00	
8714.00†	90.653	359.980	7564.17	566.85	468.96	-852.82	39°55'51.338"N	104°43'27.123"W	0.00	
8814.00†	90.653	359.980	7563.03	666.14	568.95	-852.85	39°55'52.326"N	104°43'27.124"W	0.00	
8914.00†	90.653	359.980	7561.89	765.43	668.94	-852.89	39°55'53.315"N	104°43'27.124"W	0.00	
9014.00†	90.653	359.980	7560.75	864.73	768.94	-852.92	39°55'54.303"N	104°43'27.125"W	0.00	
9114.00†	90.653	359.980	7559.61	964.02	868.93	-852.95	39°55'55.291"N	104°43'27.125"W	0.00	
9214.00†	90.653	359.980	7558.47	1063.31	968.92	-852.99	39°55'56.279"N	104°43'27.126"W	0.00	
9314.00†	90.653	359.980	7557.33	1162.60	1068.92	-853.02	39°55'57.267"N	104°43'27.126"W	0.00	
9414.00†	90.653	359.980	7556.19	1261.89	1168.91	-853.06	39°55'58.256"N	104°43'27.127"W	0.00	
9514.00†	90.653	359.980	7555.05	1361.18	1268.90	-853.09	39°55'59.244"N	104°43'27.127"W	0.00	
9614.00†	90.653	359.980	7553.91	1460.47	1368.90	-853.13	39°56'00.232"N	104°43'27.128"W	0.00	
9714.00†	90.653	359.980	7552.78	1559.76	1468.89	-853.16	39°56'01.220"N	104°43'27.128"W	0.00	
9814.00†	90.653	359.980	7551.64	1659.05	1568.88	-853.20	39°56'02.208"N	104°43'27.129"W	0.00	
9914.00†	90.653	359.980	7550.50	1758.34	1668.88	-853.23	39°56'03.196"N	104°43'27.129"W	0.00	
10014.00†	90.653	359.980	7549.36	1857.63	1768.87	-853.27	39°56'04.185"N	104°43'27.130"W	0.00	
10114.00†	90.653	359.980	7548.22	1956.93	1868.87	-853.30	39°56'05.173"N	104°43'27.130"W	0.00	
10214.00†	90.653	359.980	7547.08	2056.22	1968.86	-853.34	39°56'06.161"N	104°43'27.131"W	0.00	
10314.00†	90.653	359.980	7545.94	2155.51	2068.85	-853.37	39°56'07.149"N	104°43'27.131"W	0.00	
10414.00†	90.653	359.980	7544.80	2254.80	2168.85	-853.40	39°56'08.137"N	104°43'27.132"W	0.00	
10514.00†	90.653	359.980	7543.66	2354.09	2268.84	-853.44	39°56'09.126"N	104°43'27.132"W	0.00	
10614.00†	90.653	359.980	7542.52	2453.38	2368.83	-853.47	39°56'10.114"N	104°43'27.133"W	0.00	
10714.00†	90.653	359.980	7541.38	2552.67	2468.83	-853.51	39°56'11.102"N	104°43'27.133"W	0.00	
10814.00†	90.653	359.980	7540.24	2651.96	2568.82	-853.54	39°56'12.090"N	104°43'27.134"W	0.00	
10914.00†	90.653	359.980	7539.10	2751.25	2668.81	-853.58	39°56'13.078"N	104°43'27.134"W	0.00	
11014.00†	90.653	359.980	7537.97	2850.54	2768.81	-853.61	39°56'14.066"N	104°43'27.135"W	0.00	
11114.00†	90.653	359.980	7536.83	2949.83	2868.80	-853.65	39°56'15.055"N	104°43'27.135"W	0.00	
11214.00†	90.653	359.980	7535.69	3049.13	2968.79	-853.68	39°56'16.043"N	104°43'27.136"W	0.00	
11314.00†	90.653	359.980	7534.55	3148.42	3068.79	-853.72	39°56'17.031"N	104°43'27.136"W	0.00	
11414.00†	90.653	359.980	7533.41	3247.71	3168.78	-853.75	39°56'18.019"N	104°43'27.137"W	0.00	
11514.00†	90.653	359.980	7532.27	3347.00	3268.77	-853.78	39°56'19.007"N	104°43'27.137"W	0.00	
11614.00†	90.653	359.980	7531.13	3446.29	3368.77	-853.82	39°56'19.995"N	104°43'27.138"W	0.00	
11714.00†	90.653	359.980	7529.99	3545.58	3468.76	-853.85	39°56'20.984"N	104°43'27.138"W	0.00	
11814.00†	90.653	359.980	7528.85	3644.87	3568.75	-853.89	39°56'21.972"N	104°43'27.138"W	0.00	
11914.00†	90.653	359.980	7527.71	3744.16	3668.75	-853.92	39°56'22.960"N	104°43'27.139"W	0.00	
12014.00†	90.653	359.980	7526.57	3843.45	3768.74	-853.96	39°56'23.948"N	104°43'27.139"W	0.00	
12114.00†	90.653	359.980	7525.43	3942.74	3868.74	-853.99	39°56'24.936"N	104°43'27.140"W	0.00	
12214.00†	90.653	359.980	7524.30	4042.04	3968.73	-854.03	39°56'25.925"N	104°43'27.140"W	0.00	
12314.00†	90.653	359.980	7523.16	4141.33	4068.72	-854.06	39°56'26.913"N	104°43'27.141"W	0.00	
12414.00†	90.653	359.980	7522.02	4240.62	4168.72	-854.10	39°56'27.901"N	104°43'27.141"W	0.00	
12514.00†	90.653	359.980	7520.88	4339.91	4268.71	-854.13	39°56'28.889"N	104°43'27.142"W	0.00	
12614.00†	90.653	359.980	7519.74	4439.20	4368.70	-854.17	39°56'29.877"N	104°43'27.142"W	0.00	
12714.00†	90.653	359.980	7518.60	4538.49	4468.70	-854.20	39°56'30.865"N	104°43'27.143"W	0.00	
12814.00†	90.653	359.980	7517.46	4637.78	4568.69	-854.23	39°56'31.854"N	104°43'27.143"W	0.00	
12914.00†	90.653	359.980	7516.32	4737.07	4668.68	-854.27	39°56'32.842"N	104°43'27.144"W	0.00	



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REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#11 ALMA 1S-66-2524-11NH (287'FSL & 1844'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-11NH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-11NH PWB
Facility	SEC.25-T01S-R66W		

WELLPATH DATA (160 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
13014.00†	90.653	359.980	7515.18	4836.36	4768.68	-854.30	39°56'33.830"N	104°43'27.144"W	0.00	
13114.00†	90.653	359.980	7514.04	4935.65	4868.67	-854.34	39°56'34.818"N	104°43'27.145"W	0.00	
13214.00†	90.653	359.980	7512.90	5034.94	4968.66	-854.37	39°56'35.806"N	104°43'27.145"W	0.00	
13314.00†	90.653	359.980	7511.76	5134.24	5068.66	-854.41	39°56'36.795"N	104°43'27.146"W	0.00	
13414.00†	90.653	359.980	7510.62	5233.53	5168.65	-854.44	39°56'37.783"N	104°43'27.146"W	0.00	
13514.00†	90.653	359.980	7509.49	5332.82	5268.64	-854.48	39°56'38.771"N	104°43'27.147"W	0.00	
13614.00†	90.653	359.980	7508.35	5432.11	5368.64	-854.51	39°56'39.759"N	104°43'27.147"W	0.00	
13714.00†	90.653	359.980	7507.21	5531.40	5468.63	-854.55	39°56'40.747"N	104°43'27.148"W	0.00	
13814.00†	90.653	359.980	7506.07	5630.69	5568.62	-854.58	39°56'41.735"N	104°43'27.148"W	0.00	
13914.00†	90.653	359.980	7504.93	5729.98	5668.62	-854.62	39°56'42.724"N	104°43'27.149"W	0.00	
14014.00†	90.653	359.980	7503.79	5829.27	5768.61	-854.65	39°56'43.712"N	104°43'27.149"W	0.00	
14114.00†	90.653	359.980	7502.65	5928.56	5868.61	-854.68	39°56'44.700"N	104°43'27.150"W	0.00	
14214.00†	90.653	359.980	7501.51	6027.85	5968.60	-854.72	39°56'45.688"N	104°43'27.150"W	0.00	
14314.00†	90.653	359.980	7500.37	6127.14	6068.59	-854.75	39°56'46.676"N	104°43'27.151"W	0.00	
14414.00†	90.653	359.980	7499.23	6226.44	6168.59	-854.79	39°56'47.665"N	104°43'27.151"W	0.00	
14514.00†	90.653	359.980	7498.09	6325.73	6268.58	-854.82	39°56'48.653"N	104°43'27.152"W	0.00	
14614.00†	90.653	359.980	7496.95	6425.02	6368.57	-854.86	39°56'49.641"N	104°43'27.152"W	0.00	
14714.00†	90.653	359.980	7495.82	6524.31	6468.57	-854.89	39°56'50.629"N	104°43'27.153"W	0.00	
14814.00†	90.653	359.980	7494.68	6623.60	6568.56	-854.93	39°56'51.617"N	104°43'27.153"W	0.00	
14914.00†	90.653	359.980	7493.54	6722.89	6668.55	-854.96	39°56'52.605"N	104°43'27.154"W	0.00	
15014.00†	90.653	359.980	7492.40	6822.18	6768.55	-855.00	39°56'53.594"N	104°43'27.154"W	0.00	
15114.00†	90.653	359.980	7491.26	6921.47	6868.54	-855.03	39°56'54.582"N	104°43'27.155"W	0.00	
15214.00†	90.653	359.980	7490.12	7020.76	6968.53	-855.06	39°56'55.570"N	104°43'27.155"W	0.00	
15314.00†	90.653	359.980	7488.98	7120.05	7068.53	-855.10	39°56'56.558"N	104°43'27.156"W	0.00	
15400.01	90.653	359.980	7488.00 ²	7205.45	7154.53	-855.13	39°56'57.408"N	104°43'27.156"W	0.00	End of Tangent

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		1.00	47.36	0.00	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W	polygon
SEC.24-T1S-R66W SOUTH 1/2 SECTION		1.00	47.36	0.00	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W	polygon
SEC.25-T1S-R66W		1.00	47.36	0.00	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W	polygon
2) ALMA 1S-66-2524-11NH BHL ON PLAT (2160'FSL & 2580'FWL, SEC.24)	15400.01	7488.00	7154.53	-855.13	3217499.22	1225322.33	39°56'57.408"N	104°43'27.156"W	point
1) ALMA 1S-66-2524-11NH ENTRY POINT	8026.44	7572.00	-218.55	-852.58	3217566.53	1217949.77	39°55'44.544"N	104°43'27.120"W	point
SEC.24/25-T1S-R66W HARDLINES (460'FNL 1/2 SEC.24)		7801.00	47.36	0.00	3218416.71	1218223.15	39°55'47.172"N	104°43'16.176"W	polygon



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REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#11 ALMA 1S-66-2524-11NH (287'FSL & 1844'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-11NH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-11NH PWB
Facility	SEC.25-T01S-R66W		

SURVEY PROGRAM -

Ref Wellbore: ALMA 1S-66-2524-11NH PWB Ref Wellpath: ALMA 1S-66-2524-11NH PWP (REV-A.0)

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
14.00	15400.01	Custom BHI AutoTrak Curve (Axial Corr, Short spacing) (Rockies 0.03Gt model)		ALMA 1S-66-2524-11NH PWB



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REFERENCE WELLPATH IDENTIFICATION

Operator	HRM RESOURCES	Slot	SLOT#11 ALMA 1S-66-2524-11NH (287'FSL & 1844'FEL, SEC.25)
Area	COLORADO	Well	ALMA 1S-66-2524-11NH
Field	ADAMS COUNTY	Wellbore	ALMA 1S-66-2524-11NH PWB
Facility	SEC.25-T01S-R66W		

DESIGN COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
14.00	0.000	223.652	14.00	Tie On
1500.00	0.000	223.652	1500.00	End of Tangent
2103.25	12.065	223.652	2098.80	End of Build
7033.03	12.065	223.652	6919.69	End of Tangent
8026.44	90.653	359.980	7572.00	End of 3D Arc
15400.01	90.653	359.980	7488.00	End of Tangent