



Ursa Operating Company, LLC

Rockies Region

B&V

B&V 24A-07-07-95

Wellbore #1

Design: Actual

End of Well Report

03 March, 2017



Company:	Ursa Operating Company, LLC	Local Co-ordinate Reference:	Well B&V 24A-07-07-95
Project:	Rockies Region	TVD Reference:	B&V 24A-07-07-95 @ 5101.0usft (Plan KB)
Site:	B&V	MD Reference:	B&V 24A-07-07-95 @ 5101.0usft (Plan KB)
Well:	B&V 24A-07-07-95	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM 5000.1 Single User Db

Project		Rockies Region	
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		Using geodetic scale factor

Site		B&V			
Site Position:		Northing:		Latitude:	
From:	Lat/Long	Easting:		Longitude:	
Position Uncertainty:	0.0 usft	Slot Radius:		Grid Convergence:	

Well		B&V 24A-07-07-95, SHL LAT: 39.450276632 LONG: -108.047158048				
Well Position	+N/-S	0.0 usft	Northing:	1,598,975.60 usft	Latitude:	39.450276632
	+E/-W	0.0 usft	Easting:	2,280,818.09 usft	Longitude:	-108.047158048
Position Uncertainty		0.0 usft	Wellhead Elevation:	5,101.0 usft	Ground Level:	5,084.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	3/3/2017	9.75	65.55	51,537

Design		Actual			
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:		Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
		0.0	0.0	0.0	121.84

Survey Program		Date	3/3/2017		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
139.0	6,670.0	Actual (Wellbore #1)	MWD	MWD - Standard	

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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM 5000.1 Single User Db

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
139.0	0.04	19.54	139.0	0.0	0.0	0.0	0.03	0.03	0.00	
169.0	0.44	342.89	169.0	-0.1	0.2	0.0	1.36	1.33	-122.17	
199.0	0.48	339.02	199.0	-0.3	0.4	-0.1	0.17	0.13	-12.90	
229.0	0.53	313.76	229.0	-0.5	0.6	-0.2	0.75	0.17	-84.20	
260.0	0.53	289.54	260.0	-0.8	0.8	-0.5	0.72	0.00	-78.13	
291.0	0.48	281.01	291.0	-1.1	0.8	-0.7	0.29	-0.16	-27.52	
321.0	0.31	259.08	321.0	-1.2	0.8	-0.9	0.75	-0.57	-73.10	
352.0	0.11	256.59	352.0	-1.3	0.8	-1.1	0.65	-0.65	-8.03	
382.0	0.48	280.83	382.0	-1.5	0.8	-1.2	1.27	1.23	80.80	
413.0	0.32	354.72	413.0	-1.6	0.9	-1.3	1.60	-0.52	238.35	
443.0	0.49	324.59	443.0	-1.8	1.1	-1.4	0.89	0.57	-100.43	
474.0	0.53	313.13	474.0	-2.1	1.3	-1.6	0.35	0.13	-36.97	
504.0	0.22	354.40	504.0	-2.2	1.5	-1.7	1.31	-1.03	137.57	
535.0	0.26	353.52	535.0	-2.3	1.6	-1.7	0.13	0.13	-2.84	
565.0	0.26	339.02	565.0	-2.4	1.7	-1.8	0.22	0.00	-48.33	
596.0	0.35	160.69	596.0	-2.4	1.7	-1.8	1.97	0.29	-575.26	
626.0	0.48	114.46	626.0	-2.2	1.6	-1.6	1.16	0.43	-154.10	
657.0	0.62	107.73	657.0	-1.9	1.5	-1.3	0.50	0.45	-21.71	
688.0	1.01	125.53	688.0	-1.5	1.3	-0.9	1.49	1.26	57.42	
718.0	1.05	121.58	718.0	-0.9	1.0	-0.5	0.27	0.13	-13.17	
749.0	1.14	124.04	749.0	-0.3	0.7	0.0	0.33	0.29	7.94	
780.0	1.01	122.68	780.0	0.2	0.3	0.5	0.43	-0.42	-4.39	
810.0	0.97	125.80	810.0	0.8	0.0	0.9	0.22	-0.13	10.40	
841.0	1.54	135.20	841.0	1.4	-0.4	1.4	1.95	1.84	30.32	
883.0	3.15	128.06	882.9	3.1	-1.5	2.7	3.89	3.83	-17.00	
926.0	4.38	123.86	925.8	5.9	-3.2	5.0	2.93	2.86	-9.77	

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Site:	B&V	MD Reference:	B&V 24A-07-07-95 @ 5101.0usft (Plan KB)
Well:	B&V 24A-07-07-95	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM 5000.1 Single User Db

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	
969.0	5.80	128.52	968.7	9.7	-5.4	8.1	3.44	3.30	10.84	
1,012.0	7.38	124.96	1,011.4	14.7	-8.4	12.0	3.79	3.67	-8.28	
1,054.0	8.96	123.07	1,052.9	20.6	-11.7	17.0	3.82	3.76	-4.50	
1,097.0	10.81	118.72	1,095.3	28.0	-15.5	23.3	4.64	4.30	-10.12	
1,140.0	12.39	122.81	1,137.4	36.6	-19.9	30.8	4.14	3.67	9.51	
1,182.0	13.97	122.32	1,178.3	46.2	-25.1	38.8	3.77	3.76	-1.17	
1,225.0	15.05	123.55	1,219.9	57.0	-30.9	47.9	2.61	2.51	2.86	
1,268.0	16.17	125.14	1,261.4	68.5	-37.4	57.4	2.79	2.60	3.70	
1,310.0	17.58	124.35	1,301.5	80.7	-44.4	67.4	3.40	3.36	-1.88	
1,353.0	18.62	124.90	1,342.4	94.1	-52.0	78.4	2.45	2.42	1.28	
1,396.0	19.94	123.58	1,383.0	108.2	-60.0	90.2	3.23	3.07	-3.07	
1,438.0	21.31	122.02	1,422.3	123.0	-68.0	102.6	3.51	3.26	-3.71	
1,481.0	22.90	121.05	1,462.2	139.2	-76.4	116.4	3.79	3.70	-2.26	
1,524.0	24.67	119.60	1,501.5	156.5	-85.2	131.4	4.33	4.12	-3.37	
1,567.0	26.28	120.70	1,540.3	175.0	-94.5	147.4	3.90	3.74	2.56	
1,609.0	27.89	120.85	1,577.7	194.1	-104.3	163.8	3.84	3.83	0.36	
1,652.0	29.49	120.83	1,615.4	214.8	-114.8	181.5	3.72	3.72	-0.05	
1,695.0	31.19	120.19	1,652.5	236.5	-125.9	200.2	4.02	3.95	-1.49	
1,740.0	32.61	120.61	1,690.7	260.3	-137.9	220.7	3.19	3.16	0.93	
Last PZD Surface Survey										
1,803.0	33.71	119.73	1,743.5	294.7	-155.2	250.5	1.91	1.75	-1.40	
1,889.0	34.23	119.95	1,814.8	342.7	-179.1	292.2	0.62	0.60	0.26	
1,974.0	35.02	122.15	1,884.8	391.0	-204.0	333.6	1.74	0.93	2.59	
2,060.0	36.96	123.73	1,954.3	441.5	-231.5	376.0	2.50	2.26	1.84	
2,145.0	39.07	126.63	2,021.3	493.8	-261.7	418.7	3.25	2.48	3.41	
2,227.0	39.24	124.96	2,084.9	545.4	-292.0	460.7	1.30	0.21	-2.04	
2,313.0	38.67	121.40	2,151.8	599.5	-321.6	506.0	2.69	-0.66	-4.14	

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2,398.0	38.14	120.79	2,218.4	652.3	-348.9	551.2	0.77	-0.62	-0.72	
2,483.0	38.01	119.51	2,285.3	704.7	-375.2	596.5	0.94	-0.15	-1.51	
2,569.0	37.75	118.06	2,353.2	757.4	-400.6	642.8	1.08	-0.30	-1.69	
2,654.0	36.96	117.31	2,420.7	808.8	-424.6	688.4	1.07	-0.93	-0.88	
2,739.0	36.78	121.40	2,488.8	859.8	-449.6	732.9	2.89	-0.21	4.81	
2,824.0	36.08	121.01	2,557.1	910.2	-475.7	776.0	0.87	-0.82	-0.46	
2,910.0	35.73	120.17	2,626.8	960.6	-501.4	819.5	0.70	-0.41	-0.98	
2,995.0	35.23	123.41	2,696.0	1,010.0	-527.3	861.4	2.29	-0.59	3.81	
3,081.0	35.09	122.03	2,766.3	1,059.5	-554.1	903.0	0.94	-0.16	-1.60	
3,166.0	33.84	120.39	2,836.4	1,107.6	-579.0	944.2	1.83	-1.47	-1.93	
3,251.0	33.31	123.69	2,907.2	1,154.6	-604.0	984.0	2.24	-0.62	3.88	
3,337.0	32.65	121.71	2,979.4	1,201.4	-629.3	1,023.4	1.47	-0.77	-2.30	
3,422.0	31.46	120.92	3,051.4	1,246.5	-652.7	1,061.9	1.48	-1.40	-0.93	
3,507.0	31.68	121.62	3,123.8	1,291.0	-675.8	1,100.0	0.50	0.26	0.82	
3,593.0	31.38	121.40	3,197.2	1,336.0	-699.3	1,138.3	0.37	-0.35	-0.26	
3,678.0	30.37	124.21	3,270.1	1,379.6	-722.9	1,175.0	2.07	-1.19	3.31	
3,763.0	27.99	122.59	3,344.3	1,421.0	-745.8	1,209.6	2.95	-2.80	-1.91	
3,849.0	24.79	123.03	3,421.3	1,459.2	-766.5	1,241.7	3.73	-3.72	0.51	
3,934.0	20.70	121.75	3,499.7	1,492.0	-784.1	1,269.4	4.85	-4.81	-1.51	
4,019.0	18.15	121.97	3,579.9	1,520.3	-799.0	1,293.4	3.00	-3.00	0.26	
4,105.0	14.59	121.66	3,662.4	1,544.5	-811.8	1,314.0	4.14	-4.14	-0.36	
4,190.0	11.78	124.35	3,745.1	1,563.9	-822.3	1,330.3	3.38	-3.31	3.16	
4,275.0	9.84	121.93	3,828.6	1,579.9	-831.0	1,343.6	2.34	-2.28	-2.85	
4,361.0	8.09	120.87	3,913.6	1,593.3	-838.0	1,355.0	2.04	-2.03	-1.23	
4,446.0	6.11	124.35	3,997.9	1,603.8	-843.7	1,363.9	2.38	-2.33	4.09	
4,532.0	4.35	129.84	4,083.5	1,611.6	-848.3	1,370.2	2.13	-2.05	6.38	

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4,548.9	4.00	129.49	4,100.4	1,612.8	-849.1	1,371.1	2.08	-2.07	-2.04	
B&V 24A-07-07-95 TGT										
4,617.0	2.59	127.16	4,168.4	1,616.7	-851.6	1,374.2	2.08	-2.07	-3.43	
4,703.0	1.85	70.16	4,254.3	1,619.5	-852.3	1,377.1	2.58	-0.86	-66.28	
4,788.0	1.75	48.45	4,339.3	1,620.7	-850.9	1,379.3	0.81	-0.12	-25.54	
4,874.0	1.54	44.85	4,425.3	1,621.3	-849.2	1,381.1	0.27	-0.24	-4.19	
4,959.0	1.19	38.96	4,510.2	1,621.7	-847.7	1,382.5	0.44	-0.41	-6.93	
5,045.0	0.83	12.46	4,596.2	1,621.6	-846.4	1,383.2	0.68	-0.42	-30.81	
5,130.0	0.50	343.36	4,681.2	1,621.1	-845.5	1,383.2	0.54	-0.39	-34.24	
5,215.0	0.51	329.41	4,766.2	1,620.5	-844.8	1,382.9	0.14	0.01	-16.41	
5,301.0	0.22	310.81	4,852.2	1,620.0	-844.4	1,382.6	0.36	-0.34	-21.63	
5,386.0	0.22	269.23	4,937.2	1,619.7	-844.3	1,382.3	0.18	0.00	-48.92	
5,472.0	0.22	209.91	5,023.2	1,619.6	-844.4	1,382.1	0.25	0.00	-68.98	
5,557.0	0.92	228.85	5,108.2	1,619.4	-845.0	1,381.5	0.84	0.82	22.28	
5,642.0	1.27	217.55	5,193.2	1,619.1	-846.2	1,380.4	0.48	0.41	-13.29	
5,727.0	1.49	215.18	5,278.2	1,618.9	-847.8	1,379.2	0.27	0.26	-2.79	
5,813.0	0.40	164.60	5,364.1	1,619.1	-849.0	1,378.6	1.48	-1.27	-58.81	
5,898.0	0.53	114.19	5,449.1	1,619.7	-849.5	1,379.0	0.49	0.15	-59.31	
5,984.0	0.13	114.90	5,535.1	1,620.2	-849.7	1,379.5	0.47	-0.47	0.83	
6,069.0	0.13	221.11	5,620.1	1,620.2	-849.8	1,379.5	0.24	0.00	124.95	
6,155.0	0.57	259.35	5,706.1	1,619.9	-850.0	1,379.0	0.55	0.51	44.47	
6,240.0	1.19	252.14	5,791.1	1,619.0	-850.3	1,377.8	0.74	0.73	-8.48	
6,325.0	1.54	249.46	5,876.1	1,617.8	-851.0	1,375.9	0.42	0.41	-3.15	
6,411.0	1.58	238.52	5,962.1	1,616.5	-852.0	1,373.8	0.35	0.05	-12.72	
6,496.0	2.02	229.02	6,047.0	1,615.6	-853.6	1,371.6	0.62	0.52	-11.18	
6,581.0	1.93	230.69	6,132.0	1,614.6	-855.5	1,369.4	0.13	-0.11	1.96	

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6,610.0	2.02	229.99	6,161.0	1,614.3	-856.1	1,368.6	0.32	0.31	-2.41	
Last PZD Survey										
6,670.0	2.02	229.99	6,220.9	1,613.7	-857.5	1,367.0	0.00	0.00	0.00	
Straightline Projection to TD										

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
1,740.0	1,690.7	-137.9	220.7	Last PZD Surface Survey	
6,610.0	6,161.0	-856.1	1,368.6	Last PZD Survey	
6,670.0	6,220.9	-857.5	1,367.0	Straightline Projection to TD	

Checked By: _____	Approved By: _____	Date: _____
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