



Crestone Peak Resources

DJ BASIN

Sec.18-T1N-R67W (HINGLEY)

Hingley 1C-18H-A167

Hingley 1C-18H-A167 Wellbore #1

Survey: Survey #1

Standard Survey Report

08 October, 2019



CRESTONE PEAK
RESOURCES

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well Hingley 1C-18H-A167
Project:	DJ BASIN	TVD Reference:	WELL @ 5078.0ft (Ensign 153 RKB - 23')
Site:	Sec.18-T1N-R67W (HINGLEY)	MD Reference:	WELL @ 5078.0ft (Ensign 153 RKB - 23')
Well:	Hingley 1C-18H-A167	North Reference:	True
Wellbore:	Hingley 1C-18H-A167 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Hingley 1C-18H-A167 Wellbore #1	Database:	US_EDM

Project		DJ BASIN	
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		Sec.18-T1N-R67W (HINGLEY)						
Site Position:		Northing:	1,264,132.76	usft	Latitude:	40.057007		
From:	Lat/Long	Easting:	3,160,624.47	usft	Longitude:	-104.926172		
Position Uncertainty:	0.0	ft	Slot Radius:	13-3/16	"	Grid Convergence:	0.37	°

Well	Hingley 1C-18H-A167					
Well Position	+N/-S	0.0 ft	Northing:	1,264,132.86 usft	Latitude:	40.057007
	+E/-W	0.0 ft	Easting:	3,160,644.35 usft	Longitude:	-104.926101
Position Uncertainty		0.0 ft	Wellhead Elevation:	0.0 ft	Ground Level:	5,055.0 ft

Wellbore	Hingley 1C-18H-A167 Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	10/2/2019	8.20	66.38	51,982

Design	Hingley 1C-18H-A167 Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	200.21	

Survey Program		Date	10/7/2019		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
112.0	12,423.0	Survey #1 (Hingley 1C-18H-A167 Wellbore	MWD+HDGM	OWSG MWD + HDGM	

Survey										
	Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
	0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
	112.0	0.09	273.87	112.0	0.0	-0.1	0.0	0.08	0.08	0.00
	202.0	0.44	272.64	202.0	0.0	-0.5	0.1	0.39	0.39	-1.37
	293.0	0.62	252.16	293.0	-0.1	-1.3	0.6	0.28	0.20	-22.51
	383.0	0.53	251.10	383.0	-0.4	-2.2	1.1	0.10	-0.10	-1.18
	517.0	1.14	277.65	517.0	-0.4	-4.1	1.8	0.53	0.46	19.81
	588.0	2.56	286.37	587.9	0.1	-6.3	2.1	2.03	2.00	12.28
	673.0	4.83	297.76	672.8	2.3	-11.3	1.7	2.79	2.67	13.40
	759.0	7.79	294.99	758.2	6.5	-19.8	0.8	3.46	3.44	-3.22
	845.0	10.45	296.73	843.1	12.4	-32.0	-0.6	3.11	3.09	2.02

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Design:	Hingley 1C-18H-A167 Wellbore #1	Database:	US_EDM

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
935.0	11.58	297.82	931.5	20.3	-47.3	-2.7	1.28	1.26	1.21
1,021.0	12.35	296.93	1,015.6	28.5	-63.1	-5.0	0.92	0.90	-1.03
1,107.0	13.12	298.50	1,099.5	37.4	-79.9	-7.4	0.98	0.90	1.83
1,196.0	11.81	301.95	1,186.4	47.0	-96.5	-10.8	1.69	-1.47	3.88
1,286.0	12.29	303.16	1,274.4	57.1	-112.4	-14.8	0.60	0.53	1.34
1,372.0	12.79	304.56	1,358.4	67.5	-127.9	-19.2	0.68	0.58	1.63
1,462.0	13.61	305.22	1,446.0	79.3	-144.7	-24.4	0.93	0.91	0.73
1,553.0	14.08	299.31	1,534.3	90.9	-163.1	-28.9	1.64	0.52	-6.49
1,642.0	14.76	299.32	1,620.5	101.7	-182.4	-32.4	0.76	0.76	0.01
1,728.0	15.20	298.50	1,703.6	112.5	-201.9	-35.8	0.57	0.51	-0.95
1,818.0	14.75	294.44	1,790.6	122.8	-222.7	-38.3	1.27	-0.50	-4.51
1,907.0	14.34	293.50	1,876.7	131.9	-243.1	-39.8	0.53	-0.46	-1.06
1,996.0	13.31	293.81	1,963.1	140.4	-262.6	-41.1	1.16	-1.16	0.35
2,086.0	13.28	291.78	2,050.7	148.5	-281.7	-42.0	0.52	-0.03	-2.26
2,175.0	14.16	290.29	2,137.2	156.0	-301.4	-42.3	1.07	0.99	-1.67
2,265.0	14.07	292.58	2,224.5	164.0	-321.8	-42.8	0.63	-0.10	2.54
2,354.0	13.50	293.64	2,310.9	172.4	-341.3	-43.8	0.70	-0.64	1.19
2,443.0	12.87	297.20	2,397.5	181.1	-359.7	-45.7	1.15	-0.71	4.00
2,533.0	13.63	299.25	2,485.1	190.8	-377.8	-48.6	0.99	0.84	2.28
2,642.0	13.09	300.69	2,591.2	203.4	-399.6	-52.8	0.58	-0.50	1.32
2,731.0	13.51	299.95	2,677.8	213.7	-417.3	-56.4	0.51	0.47	-0.83
2,820.0	14.74	293.74	2,764.1	223.5	-436.7	-58.9	2.19	1.38	-6.98
2,909.0	15.06	294.74	2,850.1	232.9	-457.6	-60.5	0.46	0.36	1.12
2,999.0	15.24	294.78	2,937.0	242.7	-478.9	-62.4	0.20	0.20	0.04
3,088.0	13.86	292.02	3,023.1	251.6	-499.4	-63.6	1.73	-1.55	-3.10
3,176.0	13.20	297.78	3,108.7	260.3	-518.1	-65.3	1.70	-0.75	6.55
3,266.0	13.71	298.65	3,196.2	270.2	-536.5	-68.2	0.61	0.57	0.97
3,355.0	13.68	302.07	3,282.7	280.8	-554.7	-71.9	0.91	-0.03	3.84
3,444.0	14.41	295.76	3,369.1	291.2	-573.6	-75.1	1.90	0.82	-7.09
3,533.0	13.97	294.76	3,455.3	300.5	-593.3	-77.1	0.57	-0.49	-1.12
3,622.0	14.31	294.30	3,541.6	309.6	-613.1	-78.7	0.40	0.38	-0.52
3,711.0	14.18	293.57	3,627.9	318.4	-633.1	-80.1	0.25	-0.15	-0.82
3,825.0	15.08	294.01	3,738.2	330.1	-659.5	-81.9	0.80	0.79	0.39
3,914.0	15.48	289.85	3,824.1	338.8	-681.2	-82.6	1.31	0.45	-4.67
4,003.0	14.66	292.81	3,910.0	347.2	-702.8	-83.1	1.26	-0.92	3.33
4,092.0	14.14	298.81	3,996.2	356.8	-722.7	-85.2	1.77	-0.58	6.74
4,181.0	14.04	305.35	4,082.5	368.3	-741.0	-89.6	1.79	-0.11	7.35
4,270.0	14.72	306.56	4,168.8	381.3	-758.9	-95.6	0.84	0.76	1.36
4,359.0	15.37	304.58	4,254.7	394.7	-777.7	-101.8	0.93	0.73	-2.22
4,448.0	17.00	300.46	4,340.2	408.0	-798.6	-107.0	2.24	1.83	-4.63
4,537.0	15.29	299.53	4,425.7	420.4	-820.0	-111.2	1.94	-1.92	-1.04
4,626.0	14.84	300.34	4,511.6	431.9	-840.1	-115.1	0.56	-0.51	0.91
4,715.0	14.56	298.46	4,597.7	443.0	-859.8	-118.7	0.62	-0.31	-2.11
4,804.0	15.14	298.49	4,683.7	453.9	-879.8	-122.0	0.65	0.65	0.03

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Design:	Hingley 1C-18H-A167 Wellbore #1	Database:	US_EDM

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,893.0	14.64	296.81	4,769.7	464.5	-900.1	-125.0	0.74	-0.56	-1.89
4,982.0	15.82	297.04	4,855.6	475.1	-920.9	-127.7	1.33	1.33	0.26
5,071.0	13.94	298.45	4,941.6	485.7	-941.1	-130.7	2.15	-2.11	1.58
5,160.0	13.62	293.87	5,028.1	495.1	-960.2	-132.9	1.28	-0.36	-5.15
5,249.0	13.67	293.73	5,114.5	503.5	-979.4	-134.2	0.07	0.06	-0.16
5,338.0	14.09	293.62	5,200.9	512.1	-998.9	-135.5	0.47	0.47	-0.12
5,427.0	15.66	294.96	5,287.0	521.5	-1,019.7	-137.1	1.81	1.76	1.51
5,516.0	13.83	294.59	5,373.0	531.0	-1,040.3	-139.0	2.06	-2.06	-0.42
5,605.0	13.68	295.51	5,459.5	540.0	-1,059.5	-140.7	0.30	-0.17	1.03
5,695.0	13.36	297.05	5,547.0	549.3	-1,078.3	-143.0	0.54	-0.36	1.71
5,784.0	13.01	294.10	5,633.6	558.0	-1,096.6	-144.9	0.85	-0.39	-3.31
5,873.0	14.12	296.14	5,720.1	566.9	-1,115.5	-146.7	1.36	1.25	2.29
5,962.0	13.26	296.36	5,806.6	576.2	-1,134.4	-148.9	0.97	-0.97	0.25
6,051.0	12.88	298.12	5,893.3	585.4	-1,152.3	-151.3	0.62	-0.43	1.98
6,140.0	12.71	292.70	5,980.1	593.9	-1,170.1	-153.1	1.36	-0.19	-6.09
6,229.0	13.52	289.39	6,066.8	601.1	-1,188.9	-153.4	1.24	0.91	-3.72
6,318.0	14.03	292.95	6,153.2	608.8	-1,208.7	-153.8	1.11	0.57	4.00
6,407.0	13.94	298.99	6,239.6	618.2	-1,228.0	-155.9	1.64	-0.10	6.79
6,496.0	14.19	300.16	6,325.9	628.9	-1,246.8	-159.5	0.43	0.28	1.31
6,585.0	12.99	297.52	6,412.4	639.0	-1,265.1	-162.6	1.52	-1.35	-2.97
6,674.0	14.88	293.78	6,498.8	648.2	-1,284.5	-164.6	2.35	2.12	-4.20
6,763.0	14.76	300.57	6,584.9	658.6	-1,304.7	-167.3	1.96	-0.13	7.63
6,852.0	14.87	301.91	6,670.9	670.4	-1,324.1	-171.7	0.40	0.12	1.51
6,941.0	13.62	271.70	6,757.3	676.7	-1,344.3	-170.7	8.37	-1.40	-33.94
7,030.0	13.62	249.58	6,843.8	673.4	-1,364.6	-160.5	5.82	0.00	-24.85
7,119.0	16.33	228.09	6,929.9	661.4	-1,383.8	-142.6	6.89	3.04	-24.15
7,208.0	22.15	223.54	7,013.9	640.8	-1,404.7	-116.1	6.75	6.54	-5.11
7,297.0	23.44	213.40	7,095.9	613.9	-1,426.0	-83.5	4.64	1.45	-11.39
7,386.0	28.63	203.13	7,175.9	579.4	-1,444.1	-44.9	7.70	5.83	-11.54
7,475.0	37.98	206.57	7,250.2	535.2	-1,464.8	3.7	10.71	10.51	3.87
7,565.0	47.53	207.07	7,316.2	480.8	-1,492.4	64.3	10.62	10.61	0.56
7,654.0	52.78	193.50	7,373.4	416.9	-1,515.6	132.3	13.09	5.90	-15.25
7,743.0	57.54	186.87	7,424.3	345.1	-1,528.4	204.2	8.12	5.35	-7.45
7,832.0	66.27	186.58	7,466.1	267.2	-1,537.6	280.4	9.81	9.81	-0.33
7,921.0	75.72	185.91	7,495.1	183.6	-1,546.7	362.0	10.64	10.62	-0.75
8,010.0	79.82	185.77	7,513.9	97.1	-1,555.6	446.2	4.61	4.61	-0.16
8,033.2	81.01	185.58	7,517.8	74.3	-1,557.8	468.4	5.20	5.13	-0.80
Final TPZ - 460'FNL, 2156'FEL, Sec.18									
8,099.0	84.39	185.06	7,526.2	9.4	-1,563.9	531.5	5.20	5.14	-0.80
8,188.0	89.85	180.91	7,530.6	-79.4	-1,568.5	616.3	7.70	6.13	-4.66
8,277.0	90.26	180.16	7,530.6	-168.4	-1,569.3	700.1	0.96	0.46	-0.84
8,366.0	90.71	180.28	7,529.8	-257.4	-1,569.7	783.7	0.52	0.51	0.13
8,455.0	90.15	180.92	7,529.1	-346.3	-1,570.6	867.6	0.96	-0.63	0.72

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8,545.0	90.55	180.96	7,528.6	-436.3	-1,572.1	952.5	0.45	0.44	0.04
8,634.0	90.16	180.26	7,528.0	-525.3	-1,573.0	1,036.4	0.90	-0.44	-0.79
8,723.0	89.94	179.49	7,528.0	-614.3	-1,572.8	1,119.8	0.90	-0.25	-0.87
8,812.0	90.39	180.05	7,527.7	-703.3	-1,572.5	1,203.2	0.81	0.51	0.63
8,901.0	90.67	180.79	7,526.9	-792.3	-1,573.1	1,287.0	0.89	0.31	0.83
8,990.0	89.86	181.83	7,526.5	-881.3	-1,575.2	1,371.2	1.48	-0.91	1.17
9,079.0	89.57	181.48	7,526.9	-970.2	-1,577.7	1,455.5	0.51	-0.33	-0.39
9,168.0	89.82	181.57	7,527.4	-1,059.2	-1,580.1	1,539.9	0.30	0.28	0.10
9,257.0	89.94	180.92	7,527.6	-1,148.2	-1,582.0	1,624.0	0.74	0.13	-0.73
9,346.0	88.66	181.47	7,528.7	-1,237.2	-1,583.9	1,708.2	1.57	-1.44	0.62
9,435.0	89.74	182.15	7,529.9	-1,326.1	-1,586.7	1,792.6	1.43	1.21	0.76
9,524.0	89.45	181.26	7,530.5	-1,415.1	-1,589.4	1,877.0	1.05	-0.33	-1.00
9,613.0	89.92	181.23	7,531.0	-1,504.0	-1,591.3	1,961.2	0.53	0.53	-0.03
9,703.0	89.93	180.96	7,531.1	-1,594.0	-1,593.0	2,046.2	0.30	0.01	-0.30
9,792.0	90.55	181.30	7,530.8	-1,683.0	-1,594.8	2,130.3	0.79	0.70	0.38
9,881.0	90.10	181.44	7,530.3	-1,772.0	-1,596.9	2,214.5	0.53	-0.51	0.16
9,970.0	89.94	182.57	7,530.2	-1,860.9	-1,600.0	2,299.1	1.28	-0.18	1.27
10,059.0	89.66	183.21	7,530.5	-1,949.8	-1,604.5	2,384.0	0.78	-0.31	0.72
10,148.0	90.12	184.12	7,530.7	-2,038.6	-1,610.2	2,469.4	1.15	0.52	1.02
10,237.0	90.60	182.95	7,530.1	-2,127.5	-1,615.7	2,554.6	1.42	0.54	-1.31
10,326.0	91.13	182.33	7,528.8	-2,216.4	-1,619.8	2,639.5	0.92	0.60	-0.70
10,415.0	90.99	183.59	7,527.2	-2,305.2	-1,624.4	2,724.4	1.42	-0.16	1.42
10,504.0	91.41	183.43	7,525.3	-2,394.0	-1,629.8	2,809.7	0.50	0.47	-0.18
10,594.0	90.46	182.22	7,523.8	-2,483.9	-1,634.3	2,895.5	1.71	-1.06	-1.34
10,683.0	89.80	180.98	7,523.6	-2,572.9	-1,636.7	2,979.9	1.58	-0.74	-1.39
10,772.0	89.38	180.89	7,524.3	-2,661.9	-1,638.2	3,063.9	0.48	-0.47	-0.10
10,861.0	89.94	179.09	7,524.8	-2,750.8	-1,638.2	3,147.4	2.12	0.63	-2.02
10,950.0	90.20	178.52	7,524.7	-2,839.8	-1,636.3	3,230.3	0.70	0.29	-0.64
11,039.0	90.17	178.06	7,524.4	-2,928.8	-1,633.7	3,312.8	0.52	-0.03	-0.52
11,128.0	90.13	178.12	7,524.2	-3,017.7	-1,630.7	3,395.3	0.08	-0.04	0.07
11,217.0	90.64	178.06	7,523.6	-3,106.7	-1,627.7	3,477.7	0.58	0.57	-0.07
11,306.0	91.35	177.77	7,522.0	-3,195.6	-1,624.5	3,560.1	0.86	0.80	-0.33
11,395.0	89.72	178.16	7,521.2	-3,284.6	-1,621.3	3,642.4	1.88	-1.83	0.44
11,485.0	89.48	178.11	7,521.8	-3,374.5	-1,618.4	3,725.8	0.27	-0.27	-0.06
11,574.0	90.57	178.33	7,521.8	-3,463.5	-1,615.6	3,808.4	1.25	1.22	0.25
11,663.0	90.97	178.07	7,520.6	-3,552.4	-1,612.8	3,890.9	0.54	0.45	-0.29
11,752.0	90.43	177.17	7,519.5	-3,641.3	-1,609.1	3,973.0	1.18	-0.61	-1.01
11,841.0	91.31	178.64	7,518.1	-3,730.2	-1,605.9	4,055.4	1.92	0.99	1.65
11,930.0	91.24	178.18	7,516.2	-3,819.2	-1,603.4	4,138.0	0.52	-0.08	-0.52
12,019.0	90.97	177.95	7,514.4	-3,908.1	-1,600.4	4,220.4	0.40	-0.30	-0.26
12,108.0	90.78	177.62	7,513.1	-3,997.0	-1,597.0	4,302.7	0.43	-0.21	-0.37
12,197.0	90.40	178.29	7,512.2	-4,086.0	-1,593.8	4,385.0	0.87	-0.43	0.75
12,286.0	90.51	178.48	7,511.5	-4,174.9	-1,591.3	4,467.6	0.25	0.12	0.21
12,358.0	90.45	178.23	7,510.9	-4,246.9	-1,589.2	4,534.5	0.36	-0.08	-0.35

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well Hingley 1C-18H-A167
Project:	DJ BASIN	TVD Reference:	WELL @ 5078.0ft (Ensign 153 RKB - 23')
Site:	Sec.18-T1N-R67W (HINGLEY)	MD Reference:	WELL @ 5078.0ft (Ensign 153 RKB - 23')
Well:	Hingley 1C-18H-A167	North Reference:	True
Wellbore:	Hingley 1C-18H-A167 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Hingley 1C-18H-A167 Wellbore #1	Database:	US_EDM

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
Last Survey Drilled - 12,358' MD									
12,423.0	90.45	178.23	7,510.3	-4,311.9	-1,587.2	4,594.7	0.00	0.00	0.00
PTB - 464'FSL, 2141'FEL, Sec.18									

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
8,033.2	7,517.8	74.3	-1,557.8	Final TPZ - 460'FNL, 2156'FEL, Sec.18
12,358.0	7,510.9	-4,246.9	-1,589.2	Last Survey Drilled - 12,358' MD
12,423.0	7,510.3	-4,311.9	-1,587.2	PTB - 464'FSL, 2141'FEL, Sec.18

Checked By: _____ Approved By: _____ Date: _____