

# **GREAT WESTERN OPERATING COMPANY**

**WELD COUNTY  
SEC 8-T3N-R67W  
BERRY IC 11-239HN**

**OWB**

**Plan: PROPOSAL 1**

## **Standard Planning Report**

**03 September, 2021**

Project: WELD COUNTY  
Site: SEC 8-T3N-R67W  
Well: BERRY IC 11-239HN  
Wellbore: OWB  
Design: PROPOSAL 1



Azimuths to True North  
Magnetic North: 7.90°

Magnetic Field  
Strength: 51832.6nT  
Dip Angle: 66.50°  
Date: 9/3/2021  
Model: IGRF2020

WELL DETAILS: BERRY IC 11-239HN

+N/-S	+E/-W	Northing	Easting	4843.00	Latitude	Longitude	Slot
0.00	0.00	1332216.86	3161699.71		40.243884°N	104.920742°W	

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1647.08	0.00	0.00	1647.00	0.00	0.00	0.00	0.00	0.00	
3	2647.08	30.00	179.35	2602.00	-255.90	2.89	3.00	179.35	54.54	
4	7062.79	30.00	179.35	6426.02	-2463.77	27.81	0.00	0.00	525.09	
5	8205.74	90.00	272.23	7062.00	-2802.43	-701.87	8.00	92.49	1312.11	BERRY 239HN-LP
6	13370.58	90.00	272.23	7062.00	-2601.75	-5862.80	0.00	0.00	6296.77	BERRY 239HN-MID PNT
7	13473.06	90.00	269.15	7062.00	-2600.52	-5965.27	3.00	-90.00	6396.35	BERRY 239HN-BTM PERF
8	19083.30	90.00	269.15	7062.00	-2683.53	-11574.89	0.00	0.00	11881.87	BERRY 239HN-BTM PERF
9	19084.62	90.00	269.19	7062.00	-2683.55	-11576.21	3.00	90.00	11883.16	BERRY 239HN-PBHL
10	19183.25	90.00	269.19	7062.00	-2684.94	-11674.83	0.00	0.00	11979.59	BERRY 239HN-PBHL

FORMATION TOP DETAILS

Formation data is available

PROJECT DETAILS: WELD COUNTY

Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Northern Zone

System Datum: Mean Sea Level

SHL:  
1405' FNL, 705' FWL  
Sec 8-T3N-R67W

LP:  
1100' FSL, 1' FEL  
Sec 7-T3N-R67W

MID POINT:  
1100' FSL, 0' FWL  
Sec 7-T3N-R67W

BTM PERF:  
1101' FSL, 370' FEL  
Sec 11-T3N-R68W

BHL:  
1100' FSL, 470' FEL  
Sec 11-T3N-R68W

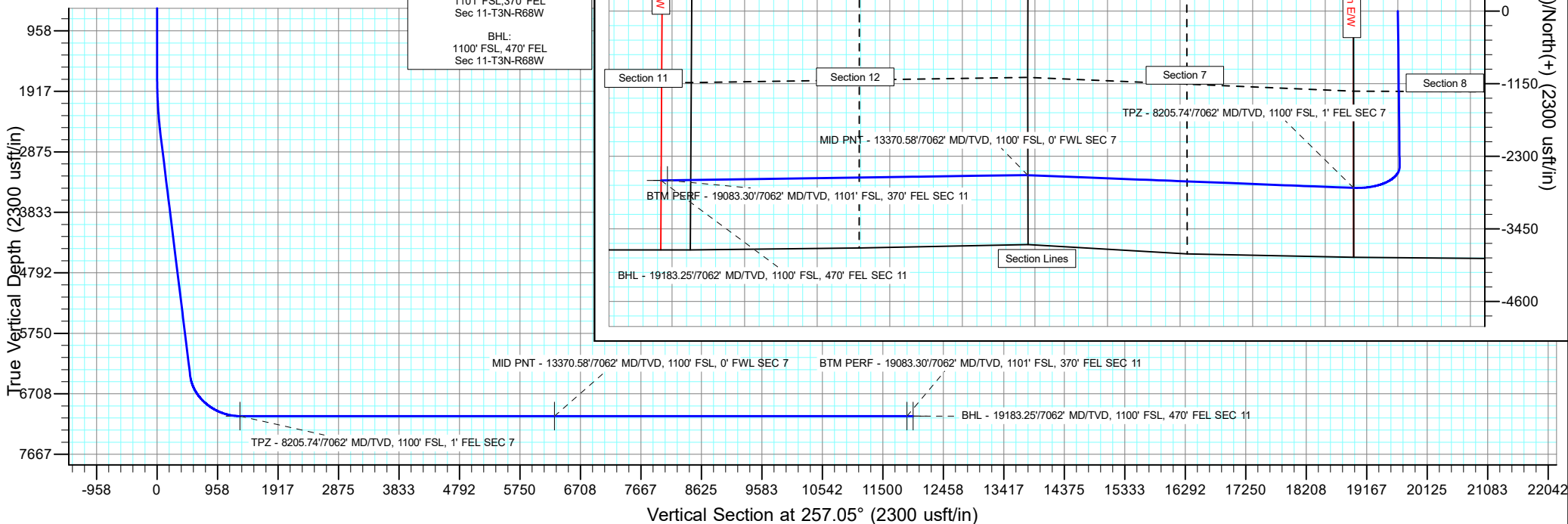
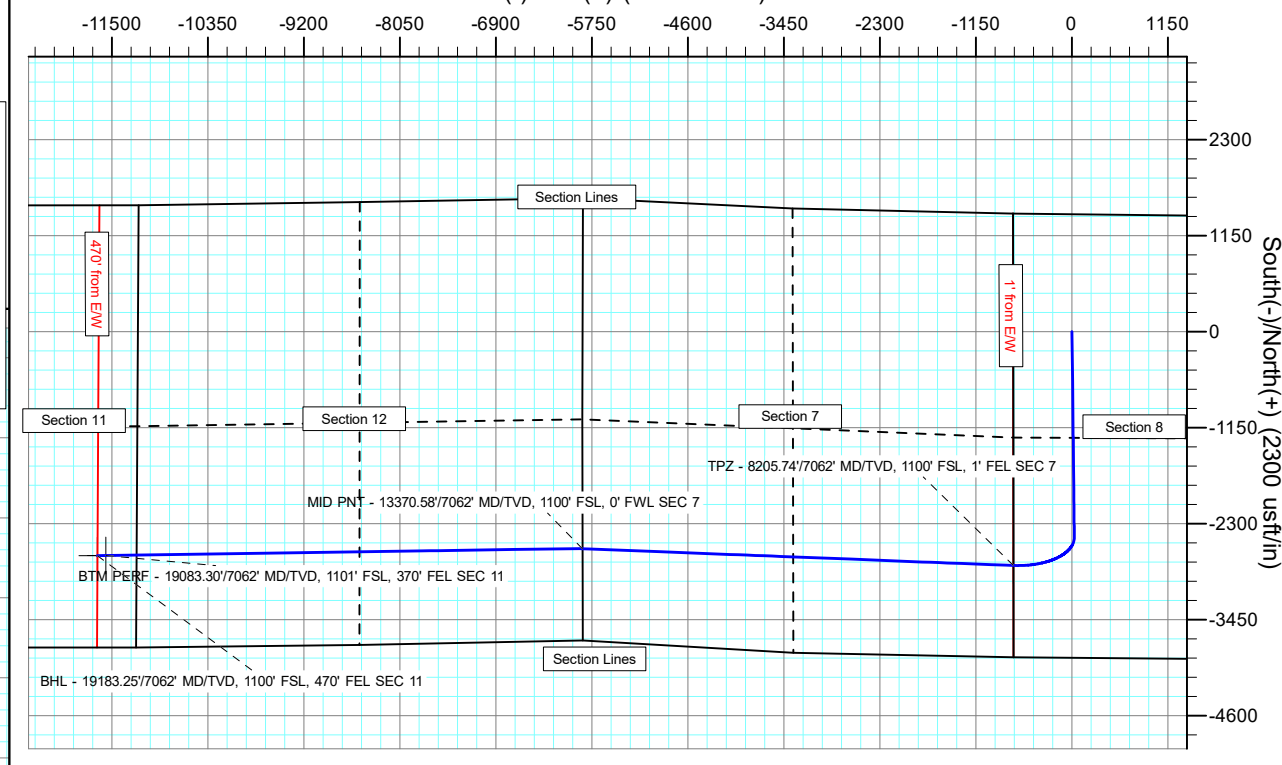
ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
1647.00	0.00	0.00	1647.00	0.00	0.00	0.00	0.00	Start Build 3.00
2647.08	30.00	179.35	2602.00	-255.90	2.89	54.54	255.91	Start 4415.71 hold at 2647.08 MD
7062.79	30.00	179.35	6426.02	-2463.77	27.81	525.09	2463.93	Start DLS 8.00 TFO 92.49
8205.74	90.00	272.23	7062.00	-2802.43	-701.87	1312.11	3340.25	TPZ - 8205.74/7062' MD/TVD, 1100' FSL, 1' FEL SEC 7
13370.58	90.00	272.23	7062.00	-2601.75	-5862.80	6296.77	8505.09	MID PNT - 13370.58/7062' MD/TVD, 1100' FSL, 0' FWL SEC 7
13473.06	90.00	269.15	7062.00	-2600.52	-5965.27	6396.35	8607.57	Start 5610.23 hold at 13473.06 MD
19083.30	90.00	269.15	7062.00	-2683.53	-11574.89	11881.87	14217.81	BTM PERF - 19083.30/7062' MD/TVD, 1101' FSL, 370' FEL SEC 11
19084.62	90.00	269.19	7062.00	-2683.55	-11576.21	11883.16	14219.13	Start 98.64 hold at 19084.62 MD
19183.25	90.00	269.19	7062.00	-2684.94	-11674.83	11979.59	14317.76	BHL - 19183.25/7062' MD/TVD, 1100' FSL, 470' FEL SEC 11

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
BERRY 239HN-BTM PERF	7062.00	-2683.53	-11574.89	1329457.77	3150142.60	40.236510°N	104.962202°W	Point
- plan hits target center								
BERRY 239HN-LP	7062.00	-2802.43	-701.87	1329409.90	3161016.16	40.236191°N	104.923256°W	Point
- plan hits target center								
BERRY 239HN-MID PNT	7062.00	-2601.75	-5862.80	1329576.86	3155854.03	40.236740°N	104.941742°W	Point
- plan hits target center								
BERRY 239HN-PBHL	7062.00	-2684.94	-11674.83	1329455.71	3150042.66	40.236506°N	104.962560°W	Point
- plan hits target center								

West(-)/East(+) (2300 usft/in)



## Planning Report

<b>Database:</b>	EDM 5000.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well BERRY IC 11-239HN
<b>Company:</b>	GREAT WESTERN OPERATING COMPANY	<b>TVD Reference:</b>	KB 20' @ 4863.00usft
<b>Project:</b>	WELD COUNTY	<b>MD Reference:</b>	KB 20' @ 4863.00usft
<b>Site:</b>	SEC 8-T3N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	BERRY IC 11-239HN	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	PROPOSAL 1		

<b>Project</b>	WELD COUNTY		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

<b>Site</b>	SEC 8-T3N-R67W			
<b>Site Position:</b>		<b>Northing:</b>	1,333,626.02 usft	<b>Latitude:</b> 40.247765°N
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,160,984.00 usft	<b>Longitude:</b> 104.923273°W
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13.200 in	

<b>Well</b>	BERRY IC 11-239HN			
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b>	1,332,216.86 usft
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b>	3,161,699.71 usft
<b>Position Uncertainty</b>	0.00 usft	<b>Wellhead Elevation:</b>	usft	<b>Ground Level:</b> 4,843.00 usft
<b>Grid Convergence:</b>	0.37 °			

<b>Wellbore</b>	OWB				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2020	9/3/2021	7.90	66.50	51,832.62007772

<b>Design</b>	PROPOSAL 1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	257.05

<b>Plan Survey Tool Program</b>	<b>Date</b>	9/3/2021		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.00	19,183.25 PROPOSAL 1 (OWB)	MWD	
			OWSG MWD - Standard	

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<b>Database:</b>	EDM 5000.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well BERRY IC 11-239HN
<b>Company:</b>	GREAT WESTERN OPERATING COMPANY	<b>TVD Reference:</b>	KB 20' @ 4863.00usft
<b>Project:</b>	WELD COUNTY	<b>MD Reference:</b>	KB 20' @ 4863.00usft
<b>Site:</b>	SEC 8-T3N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	BERRY IC 11-239HN	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	PROPOSAL 1		

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,647.00	0.00	0.00	1,647.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,647.08	30.00	179.35	2,602.00	-255.90	2.89	3.00	3.00	0.00	179.35	
7,062.79	30.00	179.35	6,426.02	-2,463.77	27.81	0.00	0.00	0.00	0.00	
8,205.74	90.00	272.23	7,062.00	-2,802.43	-701.87	8.00	5.25	8.13	92.49	BERRY 239HN-LP
13,370.58	90.00	272.23	7,062.00	-2,601.75	-5,862.80	0.00	0.00	0.00	0.00	BERRY 239HN-MID F
13,473.06	90.00	269.15	7,062.00	-2,600.52	-5,965.27	3.00	0.00	-3.00	-90.00	BERRY 239HN-BTM
19,083.30	90.00	269.15	7,062.00	-2,683.53	-11,574.89	0.00	0.00	0.00	0.00	BERRY 239HN-BTM
19,084.62	90.00	269.19	7,062.00	-2,683.55	-11,576.21	3.00	0.00	3.00	90.00	BERRY 239HN-PBHL
19,183.25	90.00	269.19	7,062.00	-2,684.94	-11,674.83	0.00	0.00	0.00	0.00	BERRY 239HN-PBHL

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<b>Company:</b>	GREAT WESTERN OPERATING COMPANY	<b>TVD Reference:</b>	KB 20' @ 4863.00usft
<b>Project:</b>	WELD COUNTY	<b>MD Reference:</b>	KB 20' @ 4863.00usft
<b>Site:</b>	SEC 8-T3N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	BERRY IC 11-239HN	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,647.00	0.00	0.00	1,647.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Start Build 3.00</b>									
1,700.00	1.59	179.35	1,699.99	-0.74	0.01	0.16	3.00	3.00	0.00
1,800.00	4.59	179.35	1,799.84	-6.12	0.07	1.31	3.00	3.00	0.00
1,900.00	7.59	179.35	1,899.26	-16.73	0.19	3.57	3.00	3.00	0.00
2,000.00	10.59	179.35	1,997.99	-32.53	0.37	6.93	3.00	3.00	0.00
2,100.00	13.59	179.35	2,095.76	-53.47	0.60	11.40	3.00	3.00	0.00
2,200.00	16.59	179.35	2,192.31	-79.50	0.90	16.94	3.00	3.00	0.00
2,300.00	19.59	179.35	2,287.35	-110.54	1.25	23.56	3.00	3.00	0.00
2,400.00	22.59	179.35	2,380.64	-146.52	1.65	31.23	3.00	3.00	0.00
2,500.00	25.59	179.35	2,471.92	-187.33	2.11	39.92	3.00	3.00	0.00
2,600.00	28.59	179.35	2,560.94	-232.86	2.63	49.63	3.00	3.00	0.00
2,647.08	30.00	179.35	2,602.00	-255.90	2.89	54.54	3.00	3.00	0.00
<b>Start 4415.71 hold at 2647.08 MD</b>									
2,700.00	30.00	179.35	2,647.83	-282.36	3.19	60.18	0.00	0.00	0.00
2,800.00	30.00	179.35	2,734.43	-332.36	3.75	70.83	0.00	0.00	0.00
2,900.00	30.00	179.35	2,821.03	-382.36	4.32	81.49	0.00	0.00	0.00
3,000.00	30.00	179.35	2,907.63	-432.36	4.88	92.15	0.00	0.00	0.00
3,100.00	30.00	179.35	2,994.23	-482.36	5.45	102.80	0.00	0.00	0.00
3,200.00	30.00	179.35	3,080.83	-532.36	6.01	113.46	0.00	0.00	0.00
3,300.00	30.00	179.35	3,167.43	-582.36	6.57	124.11	0.00	0.00	0.00
3,400.00	30.00	179.35	3,254.03	-632.36	7.14	134.77	0.00	0.00	0.00
3,500.00	30.00	179.35	3,340.63	-682.36	7.70	145.43	0.00	0.00	0.00
3,600.00	30.00	179.35	3,427.23	-732.36	8.27	156.08	0.00	0.00	0.00
3,700.00	30.00	179.35	3,513.83	-782.36	8.83	166.74	0.00	0.00	0.00
3,800.00	30.00	179.35	3,600.43	-832.36	9.40	177.40	0.00	0.00	0.00
3,900.00	30.00	179.35	3,687.03	-882.36	9.96	188.05	0.00	0.00	0.00
4,000.00	30.00	179.35	3,773.63	-932.36	10.53	198.71	0.00	0.00	0.00
4,100.00	30.00	179.35	3,860.23	-982.36	11.09	209.37	0.00	0.00	0.00
4,200.00	30.00	179.35	3,946.83	-1,032.36	11.65	220.02	0.00	0.00	0.00
4,300.00	30.00	179.35	4,033.43	-1,082.36	12.22	230.68	0.00	0.00	0.00
4,400.00	30.00	179.35	4,120.04	-1,132.36	12.78	241.33	0.00	0.00	0.00
4,500.00	30.00	179.35	4,206.64	-1,182.36	13.35	251.99	0.00	0.00	0.00
4,600.00	30.00	179.35	4,293.24	-1,232.37	13.91	262.65	0.00	0.00	0.00
4,700.00	30.00	179.35	4,379.84	-1,282.37	14.48	273.30	0.00	0.00	0.00
4,800.00	30.00	179.35	4,466.44	-1,332.37	15.04	283.96	0.00	0.00	0.00
4,900.00	30.00	179.35	4,553.04	-1,382.37	15.61	294.62	0.00	0.00	0.00
5,000.00	30.00	179.35	4,639.64	-1,432.37	16.17	305.27	0.00	0.00	0.00
5,100.00	30.00	179.35	4,726.24	-1,482.37	16.73	315.93	0.00	0.00	0.00
5,200.00	30.00	179.35	4,812.84	-1,532.37	17.30	326.58	0.00	0.00	0.00
5,300.00	30.00	179.35	4,899.44	-1,582.37	17.86	337.24	0.00	0.00	0.00
5,400.00	30.00	179.35	4,986.04	-1,632.37	18.43	347.90	0.00	0.00	0.00
5,500.00	30.00	179.35	5,072.64	-1,682.37	18.99	358.55	0.00	0.00	0.00
5,600.00	30.00	179.35	5,159.24	-1,732.37	19.56	369.21	0.00	0.00	0.00
5,700.00	30.00	179.35	5,245.84	-1,782.37	20.12	379.87	0.00	0.00	0.00
5,800.00	30.00	179.35	5,332.44	-1,832.37	20.69	390.52	0.00	0.00	0.00
5,900.00	30.00	179.35	5,419.04	-1,882.37	21.25	401.18	0.00	0.00	0.00
6,000.00	30.00	179.35	5,505.64	-1,932.37	21.81	411.84	0.00	0.00	0.00
6,100.00	30.00	179.35	5,592.24	-1,982.37	22.38	422.49	0.00	0.00	0.00
6,200.00	30.00	179.35	5,678.84	-2,032.37	22.94	433.15	0.00	0.00	0.00
6,300.00	30.00	179.35	5,765.44	-2,082.37	23.51	443.80	0.00	0.00	0.00
6,400.00	30.00	179.35	5,852.04	-2,132.37	24.07	454.46	0.00	0.00	0.00
6,500.00	30.00	179.35	5,938.64	-2,182.37	24.64	465.12	0.00	0.00	0.00

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<b>Company:</b>	GREAT WESTERN OPERATING COMPANY	<b>TVD Reference:</b>	KB 20' @ 4863.00usft
<b>Project:</b>	WELD COUNTY	<b>MD Reference:</b>	KB 20' @ 4863.00usft
<b>Site:</b>	SEC 8-T3N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	BERRY IC 11-239HN	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
6,600.00	30.00	179.35	6,025.25	-2,232.37	25.20	475.77	0.00	0.00	0.00
6,700.00	30.00	179.35	6,111.85	-2,282.37	25.77	486.43	0.00	0.00	0.00
6,800.00	30.00	179.35	6,198.45	-2,332.38	26.33	497.09	0.00	0.00	0.00
6,900.00	30.00	179.35	6,285.05	-2,382.38	26.89	507.74	0.00	0.00	0.00
7,000.00	30.00	179.35	6,371.65	-2,432.38	27.46	518.40	0.00	0.00	0.00
7,062.79	30.00	179.35	6,426.02	-2,463.77	27.81	525.09	0.00	0.00	0.00
Start DLS 8.00 TFO 92.49									
7,100.00	30.01	185.31	6,458.25	-2,482.34	27.06	529.99	8.00	0.01	16.00
7,150.00	30.43	193.22	6,501.48	-2,507.13	23.00	539.49	8.00	0.85	15.81
7,200.00	31.32	200.82	6,544.41	-2,531.61	15.49	552.31	8.00	1.77	15.21
7,250.00	32.63	207.96	6,586.84	-2,555.67	4.54	568.37	8.00	2.62	14.29
7,300.00	34.31	214.55	6,628.56	-2,579.20	-9.77	587.59	8.00	3.37	13.17
7,350.00	36.31	220.54	6,669.37	-2,602.06	-27.40	609.89	8.00	4.01	11.98
7,400.00	38.59	225.95	6,709.07	-2,624.16	-48.24	635.15	8.00	4.55	10.83
7,450.00	41.09	230.83	6,747.47	-2,645.39	-72.19	663.26	8.00	5.00	9.75
7,500.00	43.78	235.22	6,784.38	-2,665.65	-99.15	694.07	8.00	5.37	8.79
7,550.00	46.62	239.20	6,819.61	-2,684.82	-128.98	727.43	8.00	5.68	7.95
7,600.00	49.58	242.81	6,853.01	-2,702.83	-161.52	763.19	8.00	5.93	7.22
7,650.00	52.65	246.11	6,884.40	-2,719.58	-196.64	801.16	8.00	6.13	6.60
7,700.00	55.80	249.15	6,913.63	-2,734.99	-234.15	841.17	8.00	6.30	6.08
7,750.00	59.02	251.97	6,940.57	-2,748.99	-273.86	883.02	8.00	6.44	5.63
7,800.00	62.29	254.60	6,965.07	-2,761.51	-315.60	926.50	8.00	6.55	5.26
7,850.00	65.62	257.08	6,987.02	-2,772.49	-359.15	971.40	8.00	6.65	4.95
7,900.00	68.98	259.42	7,006.32	-2,781.87	-404.30	1,017.51	8.00	6.72	4.70
7,950.00	72.37	261.67	7,022.86	-2,789.61	-450.84	1,064.59	8.00	6.79	4.49
8,000.00	75.79	263.83	7,036.58	-2,795.66	-498.53	1,112.42	8.00	6.84	4.32
8,050.00	79.23	265.93	7,047.39	-2,800.01	-547.14	1,160.77	8.00	6.87	4.19
8,100.00	82.68	267.98	7,055.25	-2,802.63	-596.44	1,209.41	8.00	6.90	4.10
8,150.00	86.14	270.00	7,060.12	-2,803.51	-646.18	1,258.08	8.00	6.92	4.04
8,200.00	89.60	272.00	7,061.98	-2,802.64	-696.13	1,306.56	8.00	6.93	4.00
8,205.74	90.00	272.23	7,062.00	-2,802.43	-701.87	1,312.11	8.00	6.93	4.00
Start 5164.84 hold at 8205.74 MD									
8,300.00	90.00	272.23	7,062.00	-2,798.77	-796.05	1,403.08	0.00	0.00	0.00
8,400.00	90.00	272.23	7,062.00	-2,794.88	-895.98	1,499.59	0.00	0.00	0.00
8,500.00	90.00	272.23	7,062.00	-2,791.00	-995.90	1,596.10	0.00	0.00	0.00
8,600.00	90.00	272.23	7,062.00	-2,787.11	-1,095.83	1,692.61	0.00	0.00	0.00
8,700.00	90.00	272.23	7,062.00	-2,783.23	-1,195.75	1,789.12	0.00	0.00	0.00
8,800.00	90.00	272.23	7,062.00	-2,779.34	-1,295.67	1,885.64	0.00	0.00	0.00
8,900.00	90.00	272.23	7,062.00	-2,775.46	-1,395.60	1,982.15	0.00	0.00	0.00
9,000.00	90.00	272.23	7,062.00	-2,771.57	-1,495.52	2,078.66	0.00	0.00	0.00
9,100.00	90.00	272.23	7,062.00	-2,767.68	-1,595.45	2,175.17	0.00	0.00	0.00
9,200.00	90.00	272.23	7,062.00	-2,763.80	-1,695.37	2,271.68	0.00	0.00	0.00
9,300.00	90.00	272.23	7,062.00	-2,759.91	-1,795.30	2,368.19	0.00	0.00	0.00
9,400.00	90.00	272.23	7,062.00	-2,756.03	-1,895.22	2,464.71	0.00	0.00	0.00
9,500.00	90.00	272.23	7,062.00	-2,752.14	-1,995.15	2,561.22	0.00	0.00	0.00
9,600.00	90.00	272.23	7,062.00	-2,748.26	-2,095.07	2,657.73	0.00	0.00	0.00
9,700.00	90.00	272.23	7,062.00	-2,744.37	-2,195.00	2,754.24	0.00	0.00	0.00
9,800.00	90.00	272.23	7,062.00	-2,740.49	-2,294.92	2,850.75	0.00	0.00	0.00
9,900.00	90.00	272.23	7,062.00	-2,736.60	-2,394.84	2,947.26	0.00	0.00	0.00
10,000.00	90.00	272.23	7,062.00	-2,732.72	-2,494.77	3,043.77	0.00	0.00	0.00
10,100.00	90.00	272.23	7,062.00	-2,728.83	-2,594.69	3,140.29	0.00	0.00	0.00
10,200.00	90.00	272.23	7,062.00	-2,724.94	-2,694.62	3,236.80	0.00	0.00	0.00
10,300.00	90.00	272.23	7,062.00	-2,721.06	-2,794.54	3,333.31	0.00	0.00	0.00
10,400.00	90.00	272.23	7,062.00	-2,717.17	-2,894.47	3,429.82	0.00	0.00	0.00

# Planning Report

<b>Database:</b>	EDM 5000.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well BERRY IC 11-239HN
<b>Company:</b>	GREAT WESTERN OPERATING COMPANY	<b>TVD Reference:</b>	KB 20' @ 4863.00usft
<b>Project:</b>	WELD COUNTY	<b>MD Reference:</b>	KB 20' @ 4863.00usft
<b>Site:</b>	SEC 8-T3N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	BERRY IC 11-239HN	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
10,500.00	90.00	272.23	7,062.00	-2,713.29	-2,994.39	3,526.33	0.00	0.00	0.00
10,600.00	90.00	272.23	7,062.00	-2,709.40	-3,094.32	3,622.84	0.00	0.00	0.00
10,700.00	90.00	272.23	7,062.00	-2,705.52	-3,194.24	3,719.36	0.00	0.00	0.00
10,800.00	90.00	272.23	7,062.00	-2,701.63	-3,294.16	3,815.87	0.00	0.00	0.00
10,900.00	90.00	272.23	7,062.00	-2,697.75	-3,394.09	3,912.38	0.00	0.00	0.00
11,000.00	90.00	272.23	7,062.00	-2,693.86	-3,494.01	4,008.89	0.00	0.00	0.00
11,100.00	90.00	272.23	7,062.00	-2,689.98	-3,593.94	4,105.40	0.00	0.00	0.00
11,200.00	90.00	272.23	7,062.00	-2,686.09	-3,693.86	4,201.91	0.00	0.00	0.00
11,300.00	90.00	272.23	7,062.00	-2,682.20	-3,793.79	4,298.43	0.00	0.00	0.00
11,400.00	90.00	272.23	7,062.00	-2,678.32	-3,893.71	4,394.94	0.00	0.00	0.00
11,500.00	90.00	272.23	7,062.00	-2,674.43	-3,993.64	4,491.45	0.00	0.00	0.00
11,600.00	90.00	272.23	7,062.00	-2,670.55	-4,093.56	4,587.96	0.00	0.00	0.00
11,700.00	90.00	272.23	7,062.00	-2,666.66	-4,193.48	4,684.47	0.00	0.00	0.00
11,800.00	90.00	272.23	7,062.00	-2,662.78	-4,293.41	4,780.98	0.00	0.00	0.00
11,900.00	90.00	272.23	7,062.00	-2,658.89	-4,393.33	4,877.50	0.00	0.00	0.00
12,000.00	90.00	272.23	7,062.00	-2,655.01	-4,493.26	4,974.01	0.00	0.00	0.00
12,100.00	90.00	272.23	7,062.00	-2,651.12	-4,593.18	5,070.52	0.00	0.00	0.00
12,200.00	90.00	272.23	7,062.00	-2,647.24	-4,693.11	5,167.03	0.00	0.00	0.00
12,300.00	90.00	272.23	7,062.00	-2,643.35	-4,793.03	5,263.54	0.00	0.00	0.00
12,400.00	90.00	272.23	7,062.00	-2,639.47	-4,892.96	5,360.05	0.00	0.00	0.00
12,500.00	90.00	272.23	7,062.00	-2,635.58	-4,992.88	5,456.56	0.00	0.00	0.00
12,600.00	90.00	272.23	7,062.00	-2,631.69	-5,092.81	5,553.08	0.00	0.00	0.00
12,700.00	90.00	272.23	7,062.00	-2,627.81	-5,192.73	5,649.59	0.00	0.00	0.00
12,800.00	90.00	272.23	7,062.00	-2,623.92	-5,292.65	5,746.10	0.00	0.00	0.00
12,900.00	90.00	272.23	7,062.00	-2,620.04	-5,392.58	5,842.61	0.00	0.00	0.00
13,000.00	90.00	272.23	7,062.00	-2,616.15	-5,492.50	5,939.12	0.00	0.00	0.00
13,100.00	90.00	272.23	7,062.00	-2,612.27	-5,592.43	6,035.63	0.00	0.00	0.00
13,200.00	90.00	272.23	7,062.00	-2,608.38	-5,692.35	6,132.15	0.00	0.00	0.00
13,300.00	90.00	272.23	7,062.00	-2,604.50	-5,792.28	6,228.66	0.00	0.00	0.00
13,370.58	90.00	272.23	7,062.00	-2,601.75	-5,862.80	6,296.77	0.00	0.00	0.00
Start DLS 3.00 TFO -90.00									
13,400.00	90.00	271.34	7,062.00	-2,600.84	-5,892.21	6,325.23	3.00	0.00	-3.00
13,473.06	90.00	269.15	7,062.00	-2,600.52	-5,965.27	6,396.36	3.00	0.00	-3.00
Start 5610.23 hold at 13473.06 MD									
13,500.00	90.00	269.15	7,062.00	-2,600.92	-5,992.20	6,422.69	0.00	0.00	0.00
13,600.00	90.00	269.15	7,062.00	-2,602.40	-6,092.19	6,520.47	0.00	0.00	0.00
13,700.00	90.00	269.15	7,062.00	-2,603.88	-6,192.18	6,618.25	0.00	0.00	0.00
13,800.00	90.00	269.15	7,062.00	-2,605.36	-6,292.17	6,716.02	0.00	0.00	0.00
13,900.00	90.00	269.15	7,062.00	-2,606.84	-6,392.16	6,813.80	0.00	0.00	0.00
14,000.00	90.00	269.15	7,062.00	-2,608.32	-6,492.15	6,911.58	0.00	0.00	0.00
14,100.00	90.00	269.15	7,062.00	-2,609.80	-6,592.14	7,009.36	0.00	0.00	0.00
14,200.00	90.00	269.15	7,062.00	-2,611.28	-6,692.12	7,107.13	0.00	0.00	0.00
14,300.00	90.00	269.15	7,062.00	-2,612.76	-6,792.11	7,204.91	0.00	0.00	0.00
14,400.00	90.00	269.15	7,062.00	-2,614.24	-6,892.10	7,302.69	0.00	0.00	0.00
14,500.00	90.00	269.15	7,062.00	-2,615.71	-6,992.09	7,400.46	0.00	0.00	0.00
14,600.00	90.00	269.15	7,062.00	-2,617.19	-7,092.08	7,498.24	0.00	0.00	0.00
14,700.00	90.00	269.15	7,062.00	-2,618.67	-7,192.07	7,596.02	0.00	0.00	0.00
14,800.00	90.00	269.15	7,062.00	-2,620.15	-7,292.06	7,693.79	0.00	0.00	0.00
14,900.00	90.00	269.15	7,062.00	-2,621.63	-7,392.05	7,791.57	0.00	0.00	0.00
15,000.00	90.00	269.15	7,062.00	-2,623.11	-7,492.04	7,889.35	0.00	0.00	0.00
15,100.00	90.00	269.15	7,062.00	-2,624.59	-7,592.03	7,987.13	0.00	0.00	0.00
15,200.00	90.00	269.15	7,062.00	-2,626.07	-7,692.01	8,084.90	0.00	0.00	0.00
15,300.00	90.00	269.15	7,062.00	-2,627.55	-7,792.00	8,182.68	0.00	0.00	0.00

# Planning Report

<b>Database:</b>	EDM 5000.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well BERRY IC 11-239HN
<b>Company:</b>	GREAT WESTERN OPERATING COMPANY	<b>TVD Reference:</b>	KB 20' @ 4863.00usft
<b>Project:</b>	WELD COUNTY	<b>MD Reference:</b>	KB 20' @ 4863.00usft
<b>Site:</b>	SEC 8-T3N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	BERRY IC 11-239HN	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	PROPOSAL 1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
15,400.00	90.00	269.15	7,062.00	-2,629.03	-7,891.99	8,280.46	0.00	0.00	0.00	
15,500.00	90.00	269.15	7,062.00	-2,630.51	-7,991.98	8,378.23	0.00	0.00	0.00	
15,600.00	90.00	269.15	7,062.00	-2,631.99	-8,091.97	8,476.01	0.00	0.00	0.00	
15,700.00	90.00	269.15	7,062.00	-2,633.47	-8,191.96	8,573.79	0.00	0.00	0.00	
15,800.00	90.00	269.15	7,062.00	-2,634.95	-8,291.95	8,671.56	0.00	0.00	0.00	
15,900.00	90.00	269.15	7,062.00	-2,636.43	-8,391.94	8,769.34	0.00	0.00	0.00	
16,000.00	90.00	269.15	7,062.00	-2,637.91	-8,491.93	8,867.12	0.00	0.00	0.00	
16,100.00	90.00	269.15	7,062.00	-2,639.39	-8,591.92	8,964.89	0.00	0.00	0.00	
16,200.00	90.00	269.15	7,062.00	-2,640.87	-8,691.91	9,062.67	0.00	0.00	0.00	
16,300.00	90.00	269.15	7,062.00	-2,642.35	-8,791.89	9,160.45	0.00	0.00	0.00	
16,400.00	90.00	269.15	7,062.00	-2,643.83	-8,891.88	9,258.23	0.00	0.00	0.00	
16,500.00	90.00	269.15	7,062.00	-2,645.31	-8,991.87	9,356.00	0.00	0.00	0.00	
16,600.00	90.00	269.15	7,062.00	-2,646.79	-9,091.86	9,453.78	0.00	0.00	0.00	
16,700.00	90.00	269.15	7,062.00	-2,648.27	-9,191.85	9,551.56	0.00	0.00	0.00	
16,800.00	90.00	269.15	7,062.00	-2,649.74	-9,291.84	9,649.33	0.00	0.00	0.00	
16,900.00	90.00	269.15	7,062.00	-2,651.22	-9,391.83	9,747.11	0.00	0.00	0.00	
17,000.00	90.00	269.15	7,062.00	-2,652.70	-9,491.82	9,844.89	0.00	0.00	0.00	
17,100.00	90.00	269.15	7,062.00	-2,654.18	-9,591.81	9,942.66	0.00	0.00	0.00	
17,200.00	90.00	269.15	7,062.00	-2,655.66	-9,691.80	10,040.44	0.00	0.00	0.00	
17,300.00	90.00	269.15	7,062.00	-2,657.14	-9,791.79	10,138.22	0.00	0.00	0.00	
17,400.00	90.00	269.15	7,062.00	-2,658.62	-9,891.77	10,236.00	0.00	0.00	0.00	
17,500.00	90.00	269.15	7,062.00	-2,660.10	-9,991.76	10,333.77	0.00	0.00	0.00	
17,600.00	90.00	269.15	7,062.00	-2,661.58	-10,091.75	10,431.55	0.00	0.00	0.00	
17,700.00	90.00	269.15	7,062.00	-2,663.06	-10,191.74	10,529.33	0.00	0.00	0.00	
17,800.00	90.00	269.15	7,062.00	-2,664.54	-10,291.73	10,627.10	0.00	0.00	0.00	
17,900.00	90.00	269.15	7,062.00	-2,666.02	-10,391.72	10,724.88	0.00	0.00	0.00	
18,000.00	90.00	269.15	7,062.00	-2,667.50	-10,491.71	10,822.66	0.00	0.00	0.00	
18,100.00	90.00	269.15	7,062.00	-2,668.98	-10,591.70	10,920.43	0.00	0.00	0.00	
18,200.00	90.00	269.15	7,062.00	-2,670.46	-10,691.69	11,018.21	0.00	0.00	0.00	
18,300.00	90.00	269.15	7,062.00	-2,671.94	-10,791.68	11,115.99	0.00	0.00	0.00	
18,400.00	90.00	269.15	7,062.00	-2,673.42	-10,891.66	11,213.77	0.00	0.00	0.00	
18,500.00	90.00	269.15	7,062.00	-2,674.90	-10,991.65	11,311.54	0.00	0.00	0.00	
18,600.00	90.00	269.15	7,062.00	-2,676.38	-11,091.64	11,409.32	0.00	0.00	0.00	
18,700.00	90.00	269.15	7,062.00	-2,677.86	-11,191.63	11,507.10	0.00	0.00	0.00	
18,800.00	90.00	269.15	7,062.00	-2,679.34	-11,291.62	11,604.87	0.00	0.00	0.00	
18,900.00	90.00	269.15	7,062.00	-2,680.82	-11,391.61	11,702.65	0.00	0.00	0.00	
19,000.00	90.00	269.15	7,062.00	-2,682.30	-11,491.60	11,800.43	0.00	0.00	0.00	
19,083.30	90.00	269.15	7,062.00	-2,683.53	-11,574.89	11,881.87	0.00	0.00	0.00	
<b>Start Turn 3.00</b>										
19,084.62	90.00	269.19	7,062.00	-2,683.55	-11,576.21	11,883.16	3.00	0.00	3.00	
<b>Start 98.64 hold at 19084.62 MD</b>										
19,100.00	90.00	269.19	7,062.00	-2,683.76	-11,591.59	11,898.20	0.00	0.00	0.00	
19,183.25	90.00	269.19	7,062.00	-2,684.94	-11,674.83	11,979.59	0.00	0.00	0.00	
<b>TD at 19183.25</b>										



## Planning Report

<b>Database:</b>	EDM 5000.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well BERRY IC 11-239HN
<b>Company:</b>	GREAT WESTERN OPERATING COMPANY	<b>TVD Reference:</b>	KB 20' @ 4863.00usft
<b>Project:</b>	WELD COUNTY	<b>MD Reference:</b>	KB 20' @ 4863.00usft
<b>Site:</b>	SEC 8-T3N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	BERRY IC 11-239HN	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	PROPOSAL 1		

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
BERRY 239HN-BTM PE - plan hits target center - Point	0.00	0.00	7,062.00	-2,683.53	-11,574.89	1,329,457.77	3,150,142.60	40.236510°N	104.962202°W
BERRY 239HN-MID PN - plan hits target center - Point	0.00	0.00	7,062.00	-2,601.75	-5,862.80	1,329,576.86	3,155,854.03	40.236740°N	104.941742°W
BERRY 239HN-LP - plan hits target center - Point	0.00	0.00	7,062.00	-2,802.43	-701.87	1,329,409.90	3,161,016.17	40.236191°N	104.923256°W
BERRY 239HN-PBHL - plan hits target center - Point	0.00	0.00	7,062.00	-2,684.94	-11,674.83	1,329,455.71	3,150,042.67	40.236506°N	104.962560°W

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,647.00	1,647.00	0.00	0.00	Start Build 3.00
2,647.08	2,602.00	-255.90	2.89	Start 4415.71 hold at 2647.08 MD
7,062.79	6,426.02	-2,463.77	27.81	Start DLS 8.00 TFO 92.49
8,205.74	7,062.00	-2,802.43	-701.87	Start 5164.84 hold at 8205.74 MD
13,370.58	7,062.00	-2,601.75	-5,862.80	Start DLS 3.00 TFO -90.00
13,473.06	7,062.00	-2,600.52	-5,965.27	Start 5610.23 hold at 13473.06 MD
19,083.30	7,062.00	-2,683.53	-11,574.89	Start Turn 3.00
19,084.62	7,062.00	-2,683.55	-11,576.21	Start 98.64 hold at 19084.62 MD
19,183.25	7,062.00	-2,684.94	-11,674.83	TD at 19183.25