

# **B.C. Operating, INC.**

**Lea County, NM (NAD-27)**

**Sec 26-T25S-R34E**

**Dogie Draw 23 Federal 2H**

**Dogie Draw 23 Federal 2H**

**Plan: Plan #1**

## **Standard Planning Report**

**21 April, 2015**

**HOBBS OCD**

**MAR 09 2017**

**RECEIVED**

## Hawkeye Directional Planning Report

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Dogie Draw 23 Federal 2H
<b>Company:</b>	B.C. Operating, INC.	<b>TVD Reference:</b>	GL 3347' + KB 20' = 3367' @ 3367.00usft
<b>Project:</b>	Lea County, NM (NAD-27)	<b>MD Reference:</b>	GL 3347' + KB 20' = 3367' @ 3367.00usft
<b>Site:</b>	Sec 26-T25S-R34E	<b>North Reference:</b>	Grid
<b>Well:</b>	Dogie Draw 23 Federal 2H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Dogie Draw 23 Federal 2H		
<b>Design:</b>	Plan #1		

<b>Project</b>	Lea County, NM (NAD-27)		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	New Mexico East 3001		

<b>Site</b>	Sec 26-T25S-R34E				
<b>Site Position:</b>		<b>Northing:</b>	404,125.91 usft	<b>Latitude:</b>	32° 6' 28.636 N
<b>From:</b>	Map	<b>Easting:</b>	774,537.61 usft	<b>Longitude:</b>	103° 26' 48.077 W
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	0.47 °

<b>Well</b>	Dogie Draw 23 Federal 2H					
<b>Well Position</b>	<b>+N/-S</b>	6.64 usft	<b>Northing:</b>	404,132.55 usft	<b>Latitude:</b>	32° 6' 28.594 N
	<b>+E/-W</b>	1,319.97 usft	<b>Easting:</b>	775,857.58 usft	<b>Longitude:</b>	103° 26' 32.731 W
<b>Position Uncertainty</b>		0.00 usft	<b>Wellhead Elevation:</b>	0.00 usft	<b>Ground Level:</b>	3,347.00 usft

<b>Wellbore</b>	Dogie Draw 23 Federal 2H				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	04/20/15	7.04	60.00	48,176

<b>Design</b>	Plan #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	359.55

<b>Plan Sections</b>										
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	
11,677.04	0.00	0.00	11,677.04	0.00	0.00	0.00	0.00	0.00	0.00	
12,577.04	90.00	359.55	12,250.00	572.94	-4.49	10.00	10.00	0.00	359.55	
17,282.01	90.00	359.55	12,250.00	5,277.76	-41.39	0.00	0.00	0.00	0.00	

## Hawkeye Directional Planning Report

**Database:** EDM 5000.1 Single User Db  
**Company:** B.C. Operating, INC.  
**Project:** Lea County, NM (NAD-27)  
**Site:** Sec 26-T25S-R34E  
**Well:** Dogie Draw 23 Federal 2H  
**Wellbore:** Dogie Draw 23 Federal 2H  
**Design:** Plan #1

**Local Co-ordinate Reference:**  
**TVD Reference:**  
**MD Reference:**  
**North Reference:**  
**Survey Calculation Method:**

Well Dogie Draw 23 Federal 2H  
 GL 3347' + KB 20' = 3367' @ 3367.00usft  
 GL 3347' + KB 20' = 3367' @ 3367.00usft  
 Grid  
 Minimum Curvature

### 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
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00

## Hawkeye Directional Planning Report

**Database:** EDM 5000.1 Single User Db  
**Company:** B.C. Operating, INC.  
**Project:** Lea County, NM (NAD-27)  
**Site:** Sec 26-T25S-R34E  
**Well:** Dogie Draw 23 Federal 2H  
**Wellbore:** Dogie Draw 23 Federal 2H  
**Design:** Plan #1

**Local Co-ordinate Reference:** Well Dogie Draw 23 Federal 2H  
**TVD Reference:** GL 3347' + KB 20' = 3367' @ 3367.00usft  
**MD Reference:** GL 3347' + KB 20' = 3367' @ 3367.00usft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

### 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)
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,800.00	0.00	0.00	0.00	0.00	0.00	0.00
6,900.00	0.00	0.00	6,900.00	0.00	0.00	0.00	0.00	0.00	0.00
7,000.00	0.00	0.00	7,000.00	0.00	0.00	0.00	0.00	0.00	0.00
7,100.00	0.00	0.00	7,100.00	0.00	0.00	0.00	0.00	0.00	0.00
7,200.00	0.00	0.00	7,200.00	0.00	0.00	0.00	0.00	0.00	0.00
7,300.00	0.00	0.00	7,300.00	0.00	0.00	0.00	0.00	0.00	0.00
7,400.00	0.00	0.00	7,400.00	0.00	0.00	0.00	0.00	0.00	0.00
7,500.00	0.00	0.00	7,500.00	0.00	0.00	0.00	0.00	0.00	0.00
7,600.00	0.00	0.00	7,600.00	0.00	0.00	0.00	0.00	0.00	0.00
7,700.00	0.00	0.00	7,700.00	0.00	0.00	0.00	0.00	0.00	0.00
7,800.00	0.00	0.00	7,800.00	0.00	0.00	0.00	0.00	0.00	0.00
7,900.00	0.00	0.00	7,900.00	0.00	0.00	0.00	0.00	0.00	0.00
8,000.00	0.00	0.00	8,000.00	0.00	0.00	0.00	0.00	0.00	0.00
8,100.00	0.00	0.00	8,100.00	0.00	0.00	0.00	0.00	0.00	0.00
8,200.00	0.00	0.00	8,200.00	0.00	0.00	0.00	0.00	0.00	0.00
8,300.00	0.00	0.00	8,300.00	0.00	0.00	0.00	0.00	0.00	0.00
8,400.00	0.00	0.00	8,400.00	0.00	0.00	0.00	0.00	0.00	0.00
8,500.00	0.00	0.00	8,500.00	0.00	0.00	0.00	0.00	0.00	0.00
8,600.00	0.00	0.00	8,600.00	0.00	0.00	0.00	0.00	0.00	0.00
8,700.00	0.00	0.00	8,700.00	0.00	0.00	0.00	0.00	0.00	0.00
8,800.00	0.00	0.00	8,800.00	0.00	0.00	0.00	0.00	0.00	0.00
8,900.00	0.00	0.00	8,900.00	0.00	0.00	0.00	0.00	0.00	0.00
9,000.00	0.00	0.00	9,000.00	0.00	0.00	0.00	0.00	0.00	0.00
9,100.00	0.00	0.00	9,100.00	0.00	0.00	0.00	0.00	0.00	0.00
9,200.00	0.00	0.00	9,200.00	0.00	0.00	0.00	0.00	0.00	0.00
9,300.00	0.00	0.00	9,300.00	0.00	0.00	0.00	0.00	0.00	0.00
9,400.00	0.00	0.00	9,400.00	0.00	0.00	0.00	0.00	0.00	0.00
9,500.00	0.00	0.00	9,500.00	0.00	0.00	0.00	0.00	0.00	0.00
9,600.00	0.00	0.00	9,600.00	0.00	0.00	0.00	0.00	0.00	0.00
9,700.00	0.00	0.00	9,700.00	0.00	0.00	0.00	0.00	0.00	0.00
9,800.00	0.00	0.00	9,800.00	0.00	0.00	0.00	0.00	0.00	0.00
9,900.00	0.00	0.00	9,900.00	0.00	0.00	0.00	0.00	0.00	0.00
10,000.00	0.00	0.00	10,000.00	0.00	0.00	0.00	0.00	0.00	0.00
10,100.00	0.00	0.00	10,100.00	0.00	0.00	0.00	0.00	0.00	0.00
10,200.00	0.00	0.00	10,200.00	0.00	0.00	0.00	0.00	0.00	0.00
10,300.00	0.00	0.00	10,300.00	0.00	0.00	0.00	0.00	0.00	0.00
10,400.00	0.00	0.00	10,400.00	0.00	0.00	0.00	0.00	0.00	0.00
10,500.00	0.00	0.00	10,500.00	0.00	0.00	0.00	0.00	0.00	0.00
10,600.00	0.00	0.00	10,600.00	0.00	0.00	0.00	0.00	0.00	0.00
10,700.00	0.00	0.00	10,700.00	0.00	0.00	0.00	0.00	0.00	0.00

## Hawkeye Directional Planning Report

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Dogie Draw 23 Federal 2H
<b>Company:</b>	B.C. Operating, INC.	<b>TVD Reference:</b>	GL 3347' + KB 20' = 3367' @ 3367.00usft
<b>Project:</b>	Lea County, NM (NAD-27)	<b>MD Reference:</b>	GL 3347' + KB 20' = 3367' @ 3367.00usft
<b>Site:</b>	Sec 26-T25S-R34E	<b>North Reference:</b>	Grid
<b>Well:</b>	Dogie Draw 23 Federal 2H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Dogie Draw 23 Federal 2H		
<b>Design:</b>	Plan #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)	
10,800.00	0.00	0.00	10,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10,900.00	0.00	0.00	10,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11,000.00	0.00	0.00	11,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11,100.00	0.00	0.00	11,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11,200.00	0.00	0.00	11,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11,300.00	0.00	0.00	11,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11,400.00	0.00	0.00	11,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11,500.00	0.00	0.00	11,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11,600.00	0.00	0.00	11,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11,677.04	0.00	0.00	11,677.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Start Build at 11677.04' MD - DLS=10.00°/100'</b>										
11,700.00	2.30	359.55	11,699.99	0.46	0.00	0.46	10.00	10.00	0.00	0.00
11,800.00	12.30	359.55	11,799.06	13.14	-0.10	13.14	10.00	10.00	0.00	0.00
11,900.00	22.30	359.55	11,894.42	42.83	-0.34	42.84	10.00	10.00	0.00	0.00
12,000.00	32.30	359.55	11,983.17	88.63	-0.70	88.64	10.00	10.00	0.00	0.00
12,100.00	42.30	359.55	12,062.62	149.15	-1.17	149.15	10.00	10.00	0.00	0.00
12,200.00	52.30	359.55	12,130.35	222.54	-1.75	222.54	10.00	10.00	0.00	0.00
12,300.00	62.30	359.55	12,184.32	306.58	-2.40	306.59	10.00	10.00	0.00	0.00
12,400.00	72.30	359.55	12,222.86	398.71	-3.13	398.72	10.00	10.00	0.00	0.00
12,500.00	82.30	359.55	12,244.83	496.13	-3.89	496.15	10.00	10.00	0.00	0.00
12,574.07	89.70	359.55	12,249.99	569.97	-4.47	569.99	10.00	10.00	0.00	0.00
<b>Dogie Drawn 23 Federal 2H / FTP</b>										
12,577.04	90.00	359.55	12,250.00	572.94	-4.49	572.96	10.00	10.00	0.00	0.00
<b>End Build at 12577.04' MD - Hold Angle=90.00°</b>										
12,600.00	90.00	359.55	12,250.00	595.90	-4.67	595.92	0.00	0.00	0.00	0.00
12,700.00	90.00	359.55	12,250.00	695.89	-5.46	695.92	0.00	0.00	0.00	0.00
12,800.00	90.00	359.55	12,250.00	795.89	-6.24	795.92	0.00	0.00	0.00	0.00
12,900.00	90.00	359.55	12,250.00	895.89	-7.03	895.92	0.00	0.00	0.00	0.00
13,000.00	90.00	359.55	12,250.00	995.88	-7.81	995.92	0.00	0.00	0.00	0.00
13,100.00	90.00	359.55	12,250.00	1,095.88	-8.59	1,095.92	0.00	0.00	0.00	0.00
13,200.00	90.00	359.55	12,250.00	1,195.88	-9.38	1,195.92	0.00	0.00	0.00	0.00
13,300.00	90.00	359.55	12,250.00	1,295.88	-10.16	1,295.92	0.00	0.00	0.00	0.00
13,400.00	90.00	359.55	12,250.00	1,395.87	-10.95	1,395.92	0.00	0.00	0.00	0.00
13,500.00	90.00	359.55	12,250.00	1,495.87	-11.73	1,495.92	0.00	0.00	0.00	0.00
13,600.00	90.00	359.55	12,250.00	1,595.87	-12.52	1,595.92	0.00	0.00	0.00	0.00
13,700.00	90.00	359.55	12,250.00	1,695.86	-13.30	1,695.92	0.00	0.00	0.00	0.00
13,800.00	90.00	359.55	12,250.00	1,795.86	-14.08	1,795.92	0.00	0.00	0.00	0.00
13,900.00	90.00	359.55	12,250.00	1,895.86	-14.87	1,895.92	0.00	0.00	0.00	0.00
14,000.00	90.00	359.55	12,250.00	1,995.85	-15.65	1,995.92	0.00	0.00	0.00	0.00
14,100.00	90.00	359.55	12,250.00	2,095.85	-16.44	2,095.92	0.00	0.00	0.00	0.00
14,200.00	90.00	359.55	12,250.00	2,195.85	-17.22	2,195.92	0.00	0.00	0.00	0.00
14,300.00	90.00	359.55	12,250.00	2,295.84	-18.00	2,295.92	0.00	0.00	0.00	0.00
14,400.00	90.00	359.55	12,250.00	2,395.84	-18.79	2,395.92	0.00	0.00	0.00	0.00
14,500.00	90.00	359.55	12,250.00	2,495.84	-19.57	2,495.92	0.00	0.00	0.00	0.00
14,600.00	90.00	359.55	12,250.00	2,595.84	-20.36	2,595.92	0.00	0.00	0.00	0.00
14,700.00	90.00	359.55	12,250.00	2,695.83	-21.14	2,695.92	0.00	0.00	0.00	0.00
14,800.00	90.00	359.55	12,250.00	2,795.83	-21.93	2,795.92	0.00	0.00	0.00	0.00
14,900.00	90.00	359.55	12,250.00	2,895.83	-22.71	2,895.92	0.00	0.00	0.00	0.00
15,000.00	90.00	359.55	12,250.00	2,995.82	-23.49	2,995.92	0.00	0.00	0.00	0.00
15,100.00	90.00	359.55	12,250.00	3,095.82	-24.28	3,095.92	0.00	0.00	0.00	0.00
15,200.00	90.00	359.55	12,250.00	3,195.82	-25.06	3,195.92	0.00	0.00	0.00	0.00
15,300.00	90.00	359.55	12,250.00	3,295.81	-25.85	3,295.92	0.00	0.00	0.00	0.00
15,400.00	90.00	359.55	12,250.00	3,395.81	-26.63	3,395.92	0.00	0.00	0.00	0.00

## Hawkeye Directional Planning Report

**Database:** EDM 5000.1 Single User Db  
**Company:** B.C. Operating, INC.  
**Project:** Lea County, NM (NAD-27)  
**Site:** Sec 26-T25S-R34E  
**Well:** Dogie Draw 23 Federal 2H  
**Wellbore:** Dogie Draw 23 Federal 2H  
**Design:** Plan #1

**Local Co-ordinate Reference:** Well Dogie Draw 23 Federal 2H  
**TVD Reference:** GL 3347' + KB 20' @ 3367.00usft  
**MD Reference:** GL 3347' + KB 20' = 3367' @ 3367.00usft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

### 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)
15,500.00	90.00	359.55	12,250.00	3,495.81	-27.42	3,495.92	0.00	0.00	0.00
15,600.00	90.00	359.55	12,250.00	3,595.80	-28.20	3,595.92	0.00	0.00	0.00
15,700.00	90.00	359.55	12,250.00	3,695.80	-28.98	3,695.92	0.00	0.00	0.00
15,800.00	90.00	359.55	12,250.00	3,795.80	-29.77	3,795.92	0.00	0.00	0.00
15,900.00	90.00	359.55	12,250.00	3,895.80	-30.55	3,895.92	0.00	0.00	0.00
16,000.00	90.00	359.55	12,250.00	3,995.79	-31.34	3,995.92	0.00	0.00	0.00
16,100.00	90.00	359.55	12,250.00	4,095.79	-32.12	4,095.92	0.00	0.00	0.00
16,200.00	90.00	359.55	12,250.00	4,195.79	-32.90	4,195.92	0.00	0.00	0.00
16,300.00	90.00	359.55	12,250.00	4,295.78	-33.69	4,295.92	0.00	0.00	0.00
16,400.00	90.00	359.55	12,250.00	4,395.78	-34.47	4,395.92	0.00	0.00	0.00
16,500.00	90.00	359.55	12,250.00	4,495.78	-35.26	4,495.92	0.00	0.00	0.00
16,600.00	90.00	359.55	12,250.00	4,595.77	-36.04	4,595.92	0.00	0.00	0.00
16,700.00	90.00	359.55	12,250.00	4,695.77	-36.83	4,695.92	0.00	0.00	0.00
16,800.00	90.00	359.55	12,250.00	4,795.77	-37.61	4,795.92	0.00	0.00	0.00
16,900.00	90.00	359.55	12,250.00	4,895.76	-38.39	4,895.92	0.00	0.00	0.00
17,000.00	90.00	359.55	12,250.00	4,995.76	-39.18	4,995.92	0.00	0.00	0.00
17,100.00	90.00	359.55	12,250.00	5,095.76	-39.96	5,095.92	0.00	0.00	0.00
17,192.01	90.00	359.55	12,250.00	5,187.76	-40.68	5,187.92	0.00	0.00	0.00
<b>Dogie Drawn 23 Federal 2H / LTP</b>									
17,200.00	90.00	359.55	12,250.00	5,195.76	-40.75	5,195.92	0.00	0.00	0.00
17,282.01	90.00	359.55	12,250.00	5,277.76	-41.39	5,277.92	0.00	0.00	0.00
<b>TD at 17282.01' MD - Dogie Drawn 23 Federal 2H / BHL</b>									

### Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Dogie Drawn 23 Federal - hit/miss target - Shape - Point	0.00	0.00	12,250.00	5,187.76	-40.78	409,320.31	775,816.80	32° 7' 19.932 N	103° 26' 32.707 W
- plan misses target center by 0.10usft at 17192.01usft MD (12250.00 TVD, 5187.76 N, -40.68 E)									
Dogie Drawn 23 Federal - plan hits target center - Point	0.00	0.00	12,250.00	5,277.76	-41.39	409,410.31	775,816.19	32° 7' 20.823 N	103° 26' 32.705 W
Dogie Drawn 23 Federal - plan misses target center by 0.51usft at 12574.07usft MD (12249.99 TVD, 569.96 N, -4.47 E) - Point	0.00	0.00	12,250.00	569.96	-4.98	404,702.51	775,852.60	32° 6' 34.234 N	103° 26' 32.734 W

### Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
11,677.04	11,677.04	0.00	0.00	Start Build at 11677.04' MD
11,677.04	11,677.04	0.00	0.00	DLS=10.00°/100'
12,577.04	12,250.00	572.94	-4.49	End Build at 12577.04' MD
12,577.04	12,250.00	572.94	-4.49	Hold Angle=90.00°
17,282.01	12,250.00	5,277.76	-41.39	TD at 17282.01' MD

### WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Dogie Drawn 23 Federal 2H / BHL	12250.00	5277.76	-41.39	409410.31	775816.19	32° 7' 20.823 N	103° 26' 32.705 W	Point
Dogie Drawn 23 Federal 2H / FTP	12250.00	569.96	-4.98	404702.51	775852.60	32° 6' 34.234 N	103° 26' 32.734 W	Point
Dogie Drawn 23 Federal 2H / LTP	12250.00	5187.76	-40.78	409320.31	775816.80	32° 7' 19.932 N	103° 26' 32.707 W	Point

### SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V Sect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
11677.04	0.00	0.00	11677.04	0.00	0.00	0.00	0.00	0.00	Start Build at 11677.04' MD
12577.04	90.00	359.55	12250.00	572.94	-4.49	10.00	359.55	572.96	End Build at 12577.04' MD
17282.01	90.00	359.55	12250.00	5277.76	-41.39	0.00	0.00	5277.92	TD at 17282.01' MD

### SURFACE LOCATION

US State Plane 1927 (Exact solution)  
New Mexico East 3001  
Elevation: GL 3347' + KB 20' = 3367' @ 3367.00usft

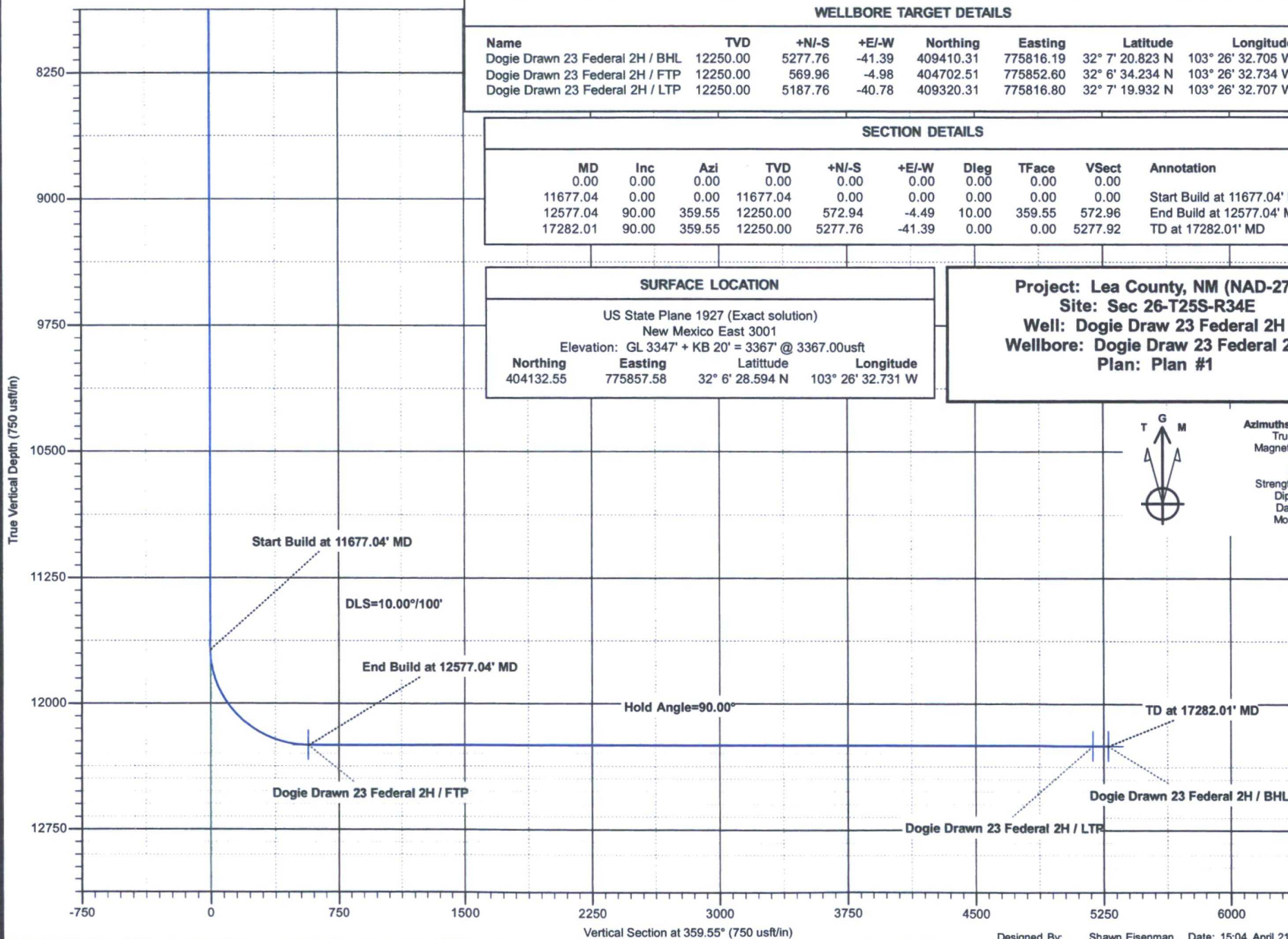
Northing	Easting	Latitude	Longitude
404132.55	775857.58	32° 6' 28.594 N	103° 26' 32.731 W

**Project: Lea County, NM (NAD-27)**  
**Site: Sec 26-T25S-R34E**  
**Well: Dogie Draw 23 Federal 2H**  
**Wellbore: Dogie Draw 23 Federal 2H**  
**Plan: Plan #1**



**Azimuths to Grid North**  
True North: -0.47°  
Magnetic North: 6.57°

**Magnetic Field**  
Strength: 48175.7snT  
Dip Angle: 60.00°  
Date: 04/20/2015  
Model: IGRF2010

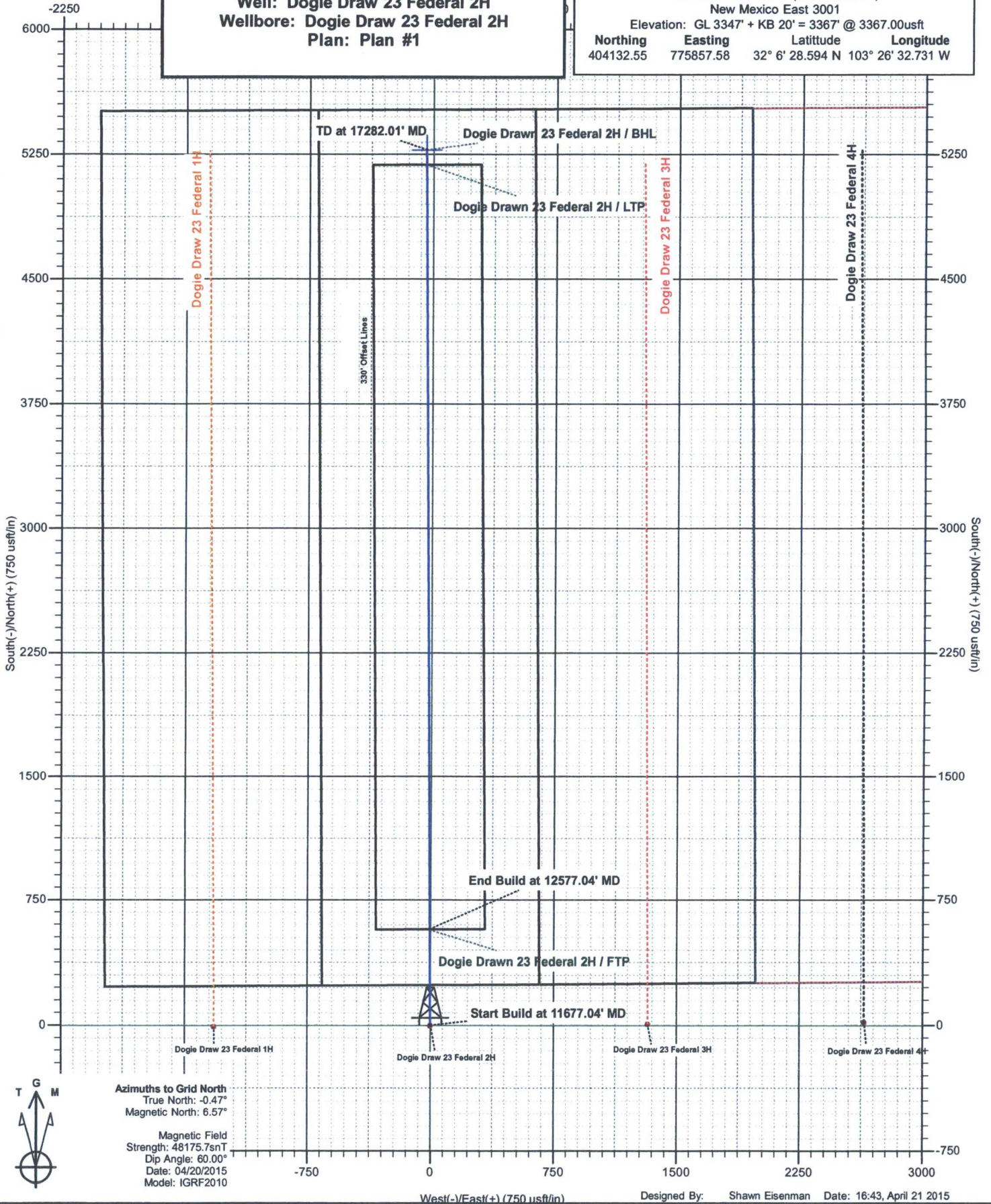


**Project:** Lea County, NM (NAD-27)  
**Site:** Sec 26-T25S-R34E  
**Well:** Dogie Draw 23 Federal 2H  
**Wellbore:** Dogie Draw 23 Federal 2H  
**Plan:** Plan #1

**SURFACE LOCATION**

US State Plane 1927 (Exact solution)  
 New Mexico East 3001  
 Elevation: GL 3347' + KB 20' = 3367' @ 3367.00usft  

Northing	Easting	Latitude	Longitude
404132.55	775857.58	32° 6' 28.594 N	103° 26' 32.731 W



**Azimuths to Grid North**  
 True North: -0.47°  
 Magnetic North: 6.57°  
**Magnetic Field**  
 Strength: 48175.7snT  
 Dip Angle: 60.00°  
 Date: 04/20/2015  
 Model: IGRF2010

