

# **Denver Division- Colorado**

**DJ - Hereford Ranch**

**Dutch Lake 08-10H**

**Dutch Lake 08-10H**

**Original Wellbore**

**Plan: APD Directional Plan**

## **Standard Planning Report**

**02 March, 2011**

# EOG Resources Inc

## Planning Report

<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Site Dutch Lake 08-10H
<b>Company:</b>	Denver Division- Colorado	<b>TVD Reference:</b>	RIG @ 4794.00ft (TBD)
<b>Project:</b>	DJ - Hereford Ranch	<b>MD Reference:</b>	RIG @ 4794.00ft (TBD)
<b>Site:</b>	Dutch Lake 08-10H	<b>North Reference:</b>	True
<b>Well:</b>	Dutch Lake 08-10H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Wellbore		
<b>Design:</b>	APD Directional Plan		

<b>Project</b>	DJ - Hereford Ranch, Weld County		
<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>	Colorado North 501		

<b>Site</b>	Dutch Lake 08-10H		
<b>Site Position:</b>		<b>Northing:</b>	429,917.75 ft
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,329,058.46 ft
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	"
		<b>Latitude:</b>	40° 30' 27.068 N
		<b>Longitude:</b>	104° 18' 59.850 W
		<b>Grid Convergence:</b>	0.76 deg

<b>Well</b>	Dutch Lake 08-10H		
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>
<b>Position Uncertainty</b>	0.00 ft	<b>Wellhead Elevation:</b>	ft
		<b>Latitude:</b>	40° 30' 27.068 N
		<b>Longitude:</b>	104° 18' 59.850 W
		<b>Ground Level:</b>	4,772.00 ft

<b>Wellbore</b>	Original Wellbore				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (deg)</b>	<b>Dip Angle (deg)</b>	<b>Field Strength (nT)</b>
	IGRF200510	3/1/2011	8.63	67.23	53,287

<b>Design</b>	APD Directional Plan			
<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) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (deg)</b>
	0.00	0.00	0.00	149.96

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (?/100ft)	Build Rate (?/100ft)	Turn Rate (?/100ft)	TFO (deg)	Target
0.00	0.00	0.00	0.00	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	
1,321.55	3.22	149.96	1,321.38	-7.81	4.52	1.00	1.00	0.00	149.96	
6,032.90	3.22	149.96	6,025.32	-236.58	136.81	0.00	0.00	0.00	0.00	
6,756.11	90.00	149.96	6,476.00	-649.26	375.45	12.00	12.00	0.00	0.00	Dutch Lake 08-10H
10,798.25	90.00	149.96	6,476.00	-4,148.44	2,398.97	0.00	0.00	0.00	0.00	Dutch Lake 08-10H

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<b>Project:</b>	DJ - Hereford Ranch	<b>MD Reference:</b>	RIG @ 4794.00ft (TBD)
<b>Site:</b>	Dutch Lake 08-10H	<b>North Reference:</b>	True
<b>Well:</b>	Dutch Lake 08-10H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Wellbore		
<b>Design:</b>	APD Directional Plan		

### Planned Survey

Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	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
<b>9-5/8"</b>									
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	1.00	149.96	1,099.99	-0.76	0.44	0.87	1.00	1.00	0.00
1,200.00	2.00	149.96	1,199.96	-3.02	1.75	3.49	1.00	1.00	0.00
1,300.00	3.00	149.96	1,299.86	-6.80	3.93	7.85	1.00	1.00	0.00
1,321.55	3.22	149.96	1,321.38	-7.81	4.52	9.02	1.00	1.00	0.00
1,400.00	3.22	149.96	1,399.71	-11.62	6.72	13.42	0.00	0.00	0.00
1,500.00	3.22	149.96	1,499.55	-16.47	9.53	19.03	0.00	0.00	0.00
1,600.00	3.22	149.96	1,599.39	-21.33	12.33	24.64	0.00	0.00	0.00
1,700.00	3.22	149.96	1,699.24	-26.19	15.14	30.25	0.00	0.00	0.00
1,800.00	3.22	149.96	1,799.08	-31.04	17.95	35.86	0.00	0.00	0.00
1,900.00	3.22	149.96	1,898.92	-35.90	20.76	41.47	0.00	0.00	0.00
2,000.00	3.22	149.96	1,998.76	-40.75	23.57	47.08	0.00	0.00	0.00
2,100.00	3.22	149.96	2,098.61	-45.61	26.37	52.68	0.00	0.00	0.00
2,200.00	3.22	149.96	2,198.45	-50.46	29.18	58.29	0.00	0.00	0.00
2,300.00	3.22	149.96	2,298.29	-55.32	31.99	63.90	0.00	0.00	0.00
2,400.00	3.22	149.96	2,398.13	-60.17	34.80	69.51	0.00	0.00	0.00
2,500.00	3.22	149.96	2,497.98	-65.03	37.61	75.12	0.00	0.00	0.00
2,600.00	3.22	149.96	2,597.82	-69.89	40.41	80.73	0.00	0.00	0.00
2,700.00	3.22	149.96	2,697.66	-74.74	43.22	86.34	0.00	0.00	0.00
2,800.00	3.22	149.96	2,797.50	-79.60	46.03	91.95	0.00	0.00	0.00
2,900.00	3.22	149.96	2,897.35	-84.45	48.84	97.56	0.00	0.00	0.00
3,000.00	3.22	149.96	2,997.19	-89.31	51.65	103.17	0.00	0.00	0.00
3,100.00	3.22	149.96	3,097.03	-94.16	54.45	108.78	0.00	0.00	0.00
3,200.00	3.22	149.96	3,196.87	-99.02	57.26	114.39	0.00	0.00	0.00
3,300.00	3.22	149.96	3,296.72	-103.88	60.07	119.99	0.00	0.00	0.00
3,400.00	3.22	149.96	3,396.56	-108.73	62.88	125.60	0.00	0.00	0.00
3,500.00	3.22	149.96	3,496.40	-113.59	65.69	131.21	0.00	0.00	0.00
3,600.00	3.22	149.96	3,596.24	-118.44	68.49	136.82	0.00	0.00	0.00
3,700.00	3.22	149.96	3,696.09	-123.30	71.30	142.43	0.00	0.00	0.00
3,800.00	3.22	149.96	3,795.93	-128.15	74.11	148.04	0.00	0.00	0.00
3,900.00	3.22	149.96	3,895.77	-133.01	76.92	153.65	0.00	0.00	0.00
4,000.00	3.22	149.96	3,995.61	-137.87	79.73	159.26	0.00	0.00	0.00
4,100.00	3.22	149.96	4,095.46	-142.72	82.53	164.87	0.00	0.00	0.00
4,200.00	3.22	149.96	4,195.30	-147.58	85.34	170.48	0.00	0.00	0.00
4,300.00	3.22	149.96	4,295.14	-152.43	88.15	176.09	0.00	0.00	0.00
4,400.00	3.22	149.96	4,394.98	-157.29	90.96	181.69	0.00	0.00	0.00
4,500.00	3.22	149.96	4,494.83	-162.14	93.77	187.30	0.00	0.00	0.00
4,600.00	3.22	149.96	4,594.67	-167.00	96.57	192.91	0.00	0.00	0.00
4,700.00	3.22	149.96	4,694.51	-171.86	99.38	198.52	0.00	0.00	0.00
4,800.00	3.22	149.96	4,794.35	-176.71	102.19	204.13	0.00	0.00	0.00
4,900.00	3.22	149.96	4,894.20	-181.57	105.00	209.74	0.00	0.00	0.00
5,000.00	3.22	149.96	4,994.04	-186.42	107.80	215.35	0.00	0.00	0.00

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<b>Project:</b>	DJ - Hereford Ranch	<b>MD Reference:</b>	RIG @ 4794.00ft (TBD)
<b>Site:</b>	Dutch Lake 08-10H	<b>North Reference:</b>	True
<b>Well:</b>	Dutch Lake 08-10H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Wellbore		
<b>Design:</b>	APD Directional Plan		

### Planned Survey

Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (?/100ft)	Build Rate (?/100ft)	Turn Rate (?/100ft)
5,100.00	3.22	149.96	5,093.88	-191.28	110.61	220.96	0.00	0.00	0.00
5,200.00	3.22	149.96	5,193.73	-196.13	113.42	226.57	0.00	0.00	0.00
5,300.00	3.22	149.96	5,293.57	-200.99	116.23	232.18	0.00	0.00	0.00
5,400.00	3.22	149.96	5,393.41	-205.85	119.04	237.79	0.00	0.00	0.00
5,500.00	3.22	149.96	5,493.25	-210.70	121.84	243.39	0.00	0.00	0.00
5,600.00	3.22	149.96	5,593.10	-215.56	124.65	249.00	0.00	0.00	0.00
5,700.00	3.22	149.96	5,692.94	-220.41	127.46	254.61	0.00	0.00	0.00
5,800.00	3.22	149.96	5,792.78	-225.27	130.27	260.22	0.00	0.00	0.00
5,900.00	3.22	149.96	5,892.62	-230.12	133.08	265.83	0.00	0.00	0.00
6,000.00	3.22	149.96	5,992.47	-234.98	135.88	271.44	0.00	0.00	0.00
6,032.90	3.22	149.96	6,025.32	-236.58	136.81	273.29	0.00	0.00	0.00
6,100.00	11.27	149.96	6,091.82	-243.89	141.04	281.74	12.00	12.00	0.00
6,200.00	23.27	149.96	6,187.14	-269.54	155.87	311.37	12.00	12.00	0.00
6,300.00	35.27	149.96	6,274.22	-311.79	180.30	360.16	12.00	12.00	0.00
6,400.00	47.27	149.96	6,349.25	-368.78	213.26	426.00	12.00	12.00	0.00
6,500.00	59.27	149.96	6,408.94	-438.03	253.30	506.00	12.00	12.00	0.00
6,600.00	71.27	149.96	6,450.71	-516.51	298.69	596.66	12.00	12.00	0.00
6,700.00	83.27	149.96	6,472.71	-600.80	347.43	694.02	12.00	12.00	0.00
6,756.11	90.00	149.96	6,476.00	-649.26	375.45	750.00	12.00	12.00	0.00
<b>7" - Dutch Lake 08-10H (ICP)</b>									
6,800.00	90.00	149.96	6,476.00	-687.25	397.43	793.89	0.00	0.00	0.00
6,900.00	90.00	149.96	6,476.00	-773.82	447.49	893.89	0.00	0.00	0.00
7,000.00	90.00	149.96	6,476.00	-860.39	497.55	993.89	0.00	0.00	0.00
7,100.00	90.00	149.96	6,476.00	-946.96	547.61	1,093.89	0.00	0.00	0.00
7,200.00	90.00	149.96	6,476.00	-1,033.52	597.67	1,193.89	0.00	0.00	0.00
7,300.00	90.00	149.96	6,476.00	-1,120.09	647.73	1,293.89	0.00	0.00	0.00
7,400.00	90.00	149.96	6,476.00	-1,206.66	697.79	1,393.89	0.00	0.00	0.00
7,500.00	90.00	149.96	6,476.00	-1,293.23	747.85	1,493.89	0.00	0.00	0.00
7,600.00	90.00	149.96	6,476.00	-1,379.79	797.91	1,593.89	0.00	0.00	0.00
7,700.00	90.00	149.96	6,476.00	-1,466.36	847.97	1,693.89	0.00	0.00	0.00
7,800.00	90.00	149.96	6,476.00	-1,552.93	898.03	1,793.89	0.00	0.00	0.00
7,900.00	90.00	149.96	6,476.00	-1,639.50	948.09	1,893.89	0.00	0.00	0.00
8,000.00	90.00	149.96	6,476.00	-1,726.06	998.15	1,993.89	0.00	0.00	0.00
8,100.00	90.00	149.96	6,476.00	-1,812.63	1,048.21	2,093.89	0.00	0.00	0.00
8,200.00	90.00	149.96	6,476.00	-1,899.20	1,098.27	2,193.89	0.00	0.00	0.00
8,300.00	90.00	149.96	6,476.00	-1,985.77	1,148.33	2,293.89	0.00	0.00	0.00
8,400.00	90.00	149.96	6,476.00	-2,072.34	1,198.39	2,393.89	0.00	0.00	0.00
8,500.00	90.00	149.96	6,476.00	-2,158.90	1,248.45	2,493.89	0.00	0.00	0.00
8,600.00	90.00	149.96	6,476.00	-2,245.47	1,298.51	2,593.89	0.00	0.00	0.00
8,700.00	90.00	149.96	6,476.00	-2,332.04	1,348.57	2,693.89	0.00	0.00	0.00
8,800.00	90.00	149.96	6,476.00	-2,418.61	1,398.63	2,793.89	0.00	0.00	0.00
8,900.00	90.00	149.96	6,476.00	-2,505.17	1,448.70	2,893.89	0.00	0.00	0.00
9,000.00	90.00	149.96	6,476.00	-2,591.74	1,498.76	2,993.89	0.00	0.00	0.00
9,100.00	90.00	149.96	6,476.00	-2,678.31	1,548.82	3,093.89	0.00	0.00	0.00
9,200.00	90.00	149.96	6,476.00	-2,764.88	1,598.88	3,193.89	0.00	0.00	0.00
9,300.00	90.00	149.96	6,476.00	-2,851.44	1,648.94	3,293.89	0.00	0.00	0.00
9,400.00	90.00	149.96	6,476.00	-2,938.01	1,699.00	3,393.89	0.00	0.00	0.00
9,415.30	90.00	149.96	6,476.00	-2,951.26	1,706.66	3,409.19	0.00	0.00	0.00
<b>Carl Will #1 (150' radius)</b>									
9,500.00	90.00	149.96	6,476.00	-3,024.58	1,749.06	3,493.89	0.00	0.00	0.00
9,600.00	90.00	149.96	6,476.00	-3,111.15	1,799.12	3,593.89	0.00	0.00	0.00
9,700.00	90.00	149.96	6,476.00	-3,197.71	1,849.18	3,693.89	0.00	0.00	0.00
9,800.00	90.00	149.96	6,476.00	-3,284.28	1,899.24	3,793.89	0.00	0.00	0.00

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<b>Project:</b>	DJ - Hereford Ranch	<b>MD Reference:</b>	RIG @ 4794.00ft (TBD)
<b>Site:</b>	Dutch Lake 08-10H	<b>North Reference:</b>	True
<b>Well:</b>	Dutch Lake 08-10H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Wellbore		
<b>Design:</b>	APD Directional Plan		

### Planned Survey

Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (?/100ft)	Build Rate (?/100ft)	Turn Rate (?/100ft)
9,900.00	90.00	149.96	6,476.00	-3,370.85	1,949.30	3,893.89	0.00	0.00	0.00
10,000.00	90.00	149.96	6,476.00	-3,457.42	1,999.36	3,993.89	0.00	0.00	0.00
10,100.00	90.00	149.96	6,476.00	-3,543.98	2,049.42	4,093.89	0.00	0.00	0.00
10,200.00	90.00	149.96	6,476.00	-3,630.55	2,099.48	4,193.89	0.00	0.00	0.00
10,300.00	90.00	149.96	6,476.00	-3,717.12	2,149.54	4,293.89	0.00	0.00	0.00
10,400.00	90.00	149.96	6,476.00	-3,803.69	2,199.60	4,393.89	0.00	0.00	0.00
10,500.00	90.00	149.96	6,476.00	-3,890.26	2,249.66	4,493.89	0.00	0.00	0.00
10,600.00	90.00	149.96	6,476.00	-3,976.82	2,299.72	4,593.89	0.00	0.00	0.00
10,700.00	90.00	149.96	6,476.00	-4,063.39	2,349.78	4,693.89	0.00	0.00	0.00
10,798.25	90.00	149.96	6,476.00	-4,148.44	2,398.97	4,792.14	0.00	0.00	0.00
4 1/2" - Dutch Lake 08-10H (BHL)									

### Targets

#### Target Name

- hit/miss target	Dip Angle (deg)	Dip Dir. (deg)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- Shape									
Carl Will #1 (150' radii	0.00	0.00	7,238.00	-2,877.54	1,834.13	427,064.95	2,330,930.82	40° 29' 58.632 N	104° 18' 36.108 W
- plan misses target center by 776.10ft at 9415.30ft MD (6476.00 TVD, -2951.26 N, 1706.66 E)									
- Circle (radius 150.00)									
Dutch Lake 08-10H (E	0.00	0.00	6,476.00	-4,148.53	2,398.81	425,801.61	2,331,512.41	40° 29' 46.072 N	104° 18' 28.800 W
- plan misses target center by 0.18ft at 10798.25ft MD (6476.00 TVD, -4148.44 N, 2398.97 E)									
- Point									

### Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
800.00	800.00	9-5/8"	9-5/8	13-1/2
6,756.11	6,476.00	7"	7	8-3/4
10,798.25	6,476.00	4 1/2"	4-1/2	6

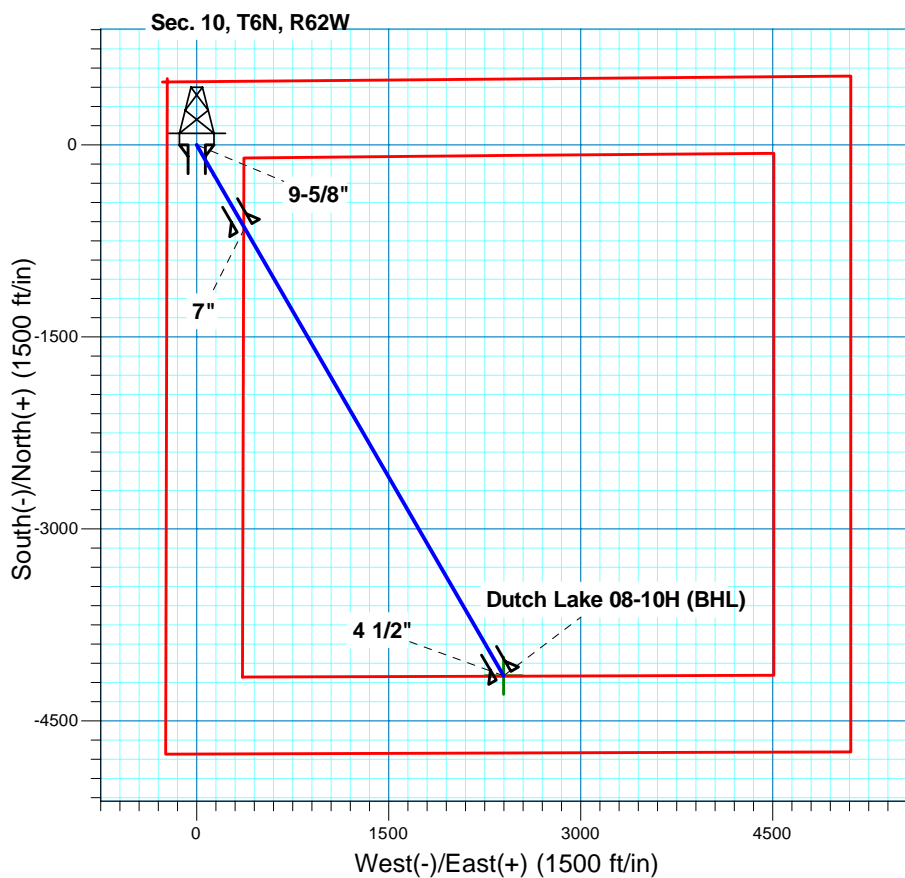
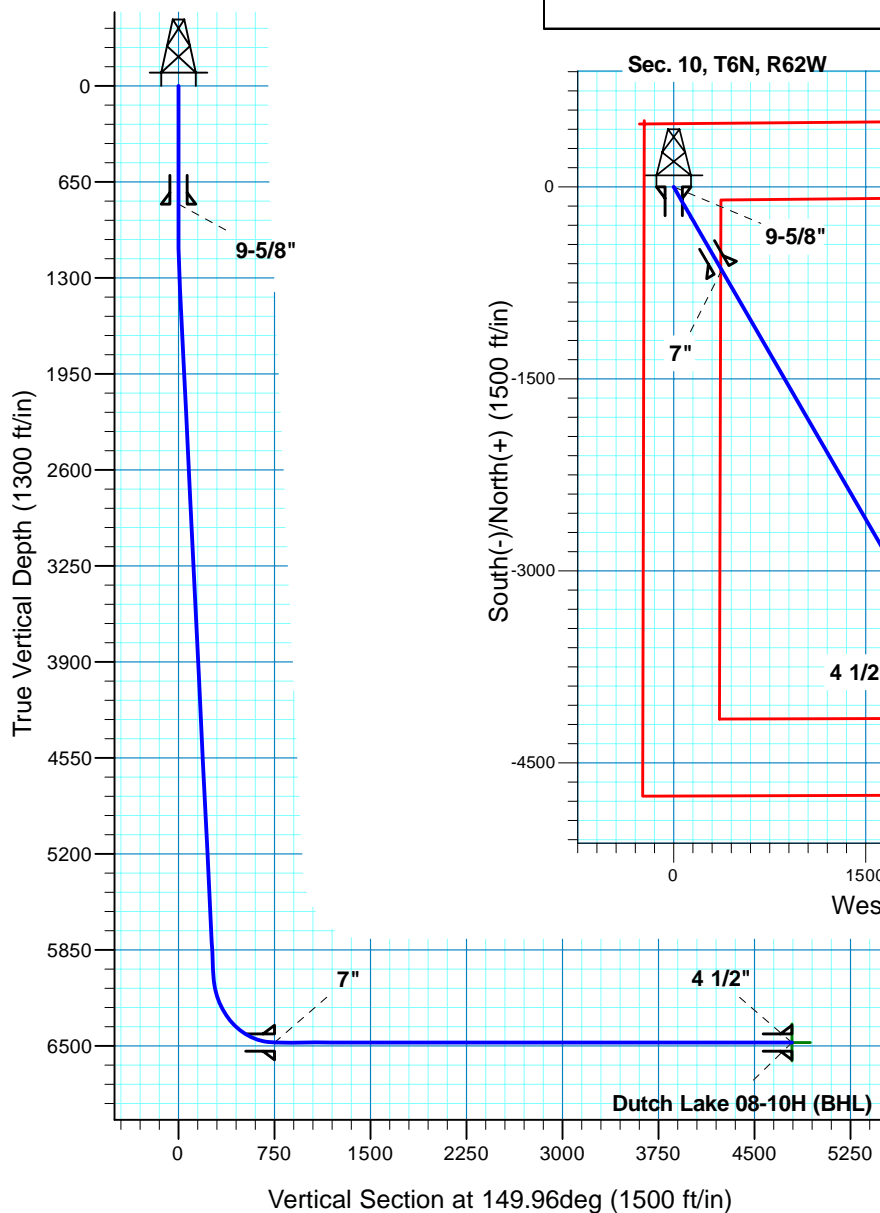
# Dutch Lake 08-10H

## Section 10 T6N R62W

### Weld County, CO

#### Surface Location

NAD 1927 (NADCON CONUS) Colorado North 501  
 Ground Elevation: 4772.00 RIG @ 4794.00ft (TBD)  
 Northing Easting Latitude Longitude  
 429917.75 2329058.46 40° 30' 27.068 N 104° 18' 59.850 W



**T M**  
 Azimuths to True North  
 Magnetic North: 8.63°  
 Magnetic Field  
 Strength: 53286.6snT  
 Dip Angle: 67.23°  
 Date: 3/1/2011  
 Model: IGRF200510

Project: DJ - Hereford Ranch  
 Site: Dutch Lake 08-10H  
 Well: Dutch Lake 08-10H  
 Plan: APD Directional Plan

#### 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	1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00	0.00	
3	1321.55	3.22	149.96	1321.38	-7.81	4.52	1.00	149.96	9.02	
4	6032.90	3.22	149.96	6025.32	-236.58	136.81	0.00	0.00	273.29	
5	6756.11	90.00	149.96	6476.00	-649.26	375.45	12.00	0.00	750.00	Dutch Lake 08-10H (ICP)
6	10798.25	90.00	149.96	6476.00	-4148.44	2398.97	0.00	0.00	4792.14	Dutch Lake 08-10H (BHL)

#### TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Dutch Lake 08-10H (BHL)	6476.00	-4148.53	2398.81	425801.61	2331512.41	40° 29' 46.072 N	104° 18' 28.800 W	Point