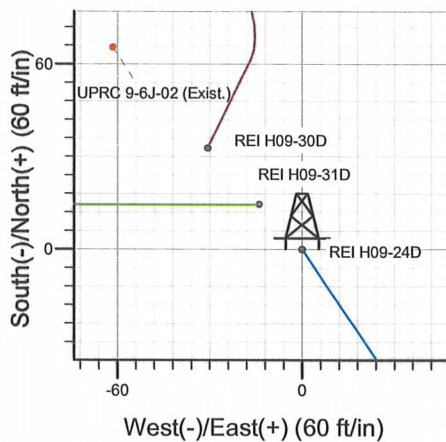
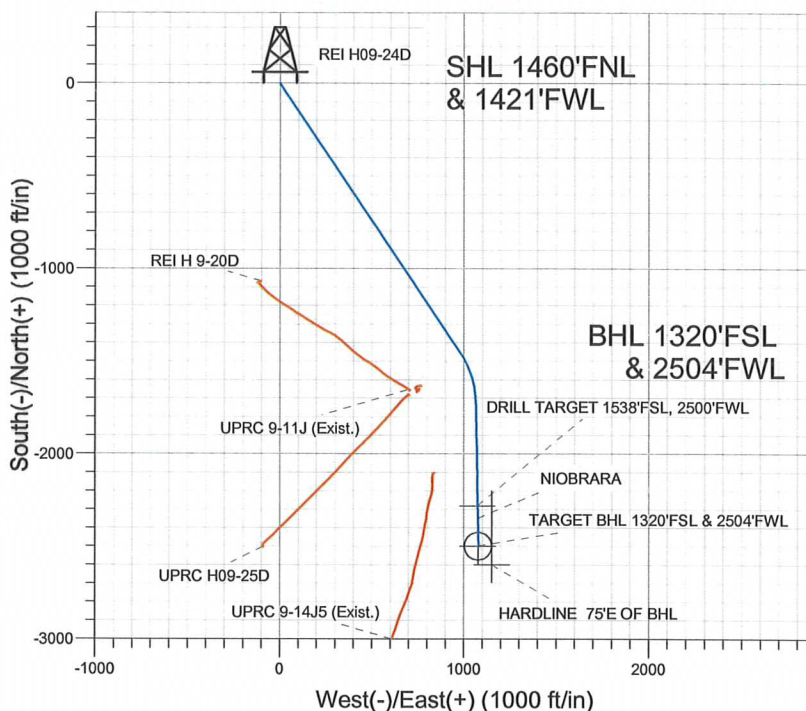
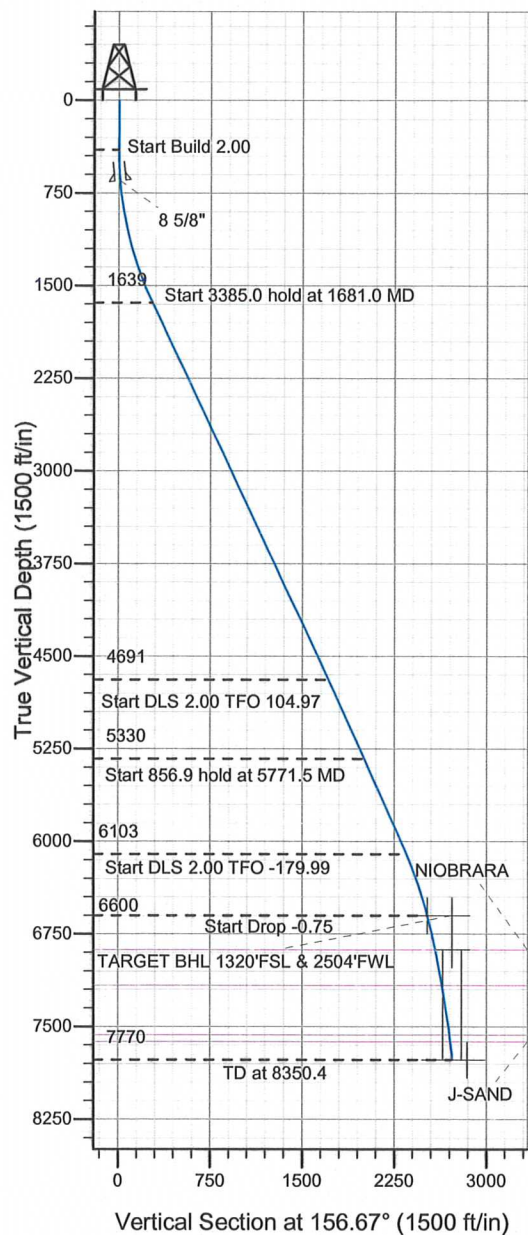


Well Name: REI H09-24D

Surface Location: REI H09-31D Pad Sec.9-T3N-R65W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4829.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1332487.87	3230960.99	40.243120	-104.672630	
		Original Well Elev	WELL @ 4842.0ft (Original Well Elev)			

NOBLE ENERGY INC WELD COUNTY CO



REI H09-31D Pad Sec.9-T3N-R65W
REI H09-24D
Noble REI H09-24D Plan #2 (1-12-12)
13:19, January 12 2012



Azimuths to True North
Magnetic North: 8.68°
Magnetic Field
Strength: 53023.7snT
Dip Angle: 66.93°
Date: 1/4/2012
Model: IGRF200510

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
DRILL TARGET 1538'FSL, 2500'FWL	6600.0	-2281.6	1074.0	40.236857	-104.668783	Point
TARGET BHL 1320'FSL & 2504'FWL	6600.0	-2499.1	1077.7	40.236260	-104.668770	Point
TARGET CIRCLE 1320'FSL & 2504'FWL	6878.0	-2499.1	1077.7	40.236260	-104.668770	Circle (Radius: 75.0)
HARDLINE 75'E OF BHL	7770.0	-2599.1	1152.7	40.235985	-104.668501	Polygon

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.0	
3	1681.0	25.62	146.00	1638.7	-233.5	157.5	2.00	146.00	276.8	
4	5066.0	25.62	146.00	4690.9	-1447.0	976.0	0.00	0.00	1715.2	
5	5771.5	25.62	179.00	5330.3	-1727.3	1064.4	2.00	104.97	2007.6	
6	6628.3	25.62	179.00	6102.9	-2097.7	1070.8	0.00	0.00	2350.2	
7	7159.1	15.00	179.00	6600.0	-2281.6	1074.0	2.00	-179.99	2520.4	
8	8350.4	6.07	179.00	7770.0	-2499.1	1077.8	0.75	180.00	2721.6	DRILL TARGET 1538'FSL, 2500'FWL



NOBLE ENERGY INC WELD COUNTY CO

SEC.9-T3N-R65W

REI H09-31D Pad Sec.9-T3N-R65W

REI H09-24D

Wellbore #1

Plan: Noble REI H09-24D Plan #2 (1-12-12)

Standard Planning Report

12 January, 2012



Database: Landmark
 Company: NOBLE ENERGY INC WELD COUNTY CO
 Project: SEC.9-T3N-R65W
 Site: REI H09-31D Pad Sec.9-T3N-R65W
 Well: REI H09-24D
 Wellbore: Wellbore #1
 Design: Noble REI H09-24D Plan #2 (1-12-12)

Local Co-ordinate Reference: Well REI H09-24D
 TVD Reference: WELL @ 4842.0ft (Original Well Elev)
 MD Reference: WELL @ 4842.0ft (Original Well Elev)
 North Reference: True
 Survey Calculation Method: Minimum Curvature

Project SEC.9-T3N-R65W, Weld County, Colorado

Map System: US State Plane 1983
Geo Datum: North American Datum 1983
Map Zone: Colorado Northern Zone

System Datum: Mean Sea Level
 Using Well Reference Point
 Using geodetic scale factor

Site REI H09-31D Pad Sec.9-T3N-R65W

Site Position: Northing: 1,332,502.33ft Latitude: 40.243160
From: Lat/Long Easting: 3,230,946.90ft Longitude: -104.672680
Position Uncertainty: 0.0 ft Slot Radius: " Grid Convergence: 0.53 °

Well REI H09-24D

Well Position +N/-S -14.6 ft Northing: 1,332,487.87 ft Latitude: 40.243120
 +E/-W 14.0 ft Easting: 3,230,960.99 ft Longitude: -104.672630
Position Uncertainty 0.0 ft Wellhead Elevation: ft Ground Level: 4,829.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	1/4/2012	8.68	66.93	53,024

Design Noble REI H09-24D Plan #2 (1-12-12)

Audit Notes:

Version: Phase: PROTOTYPE Tie On Depth: 0.0

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	156.67

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,681.0	25.62	146.00	1,638.7	-233.5	157.5	2.00	2.00	0.00	146.00	
5,066.0	25.62	146.00	4,690.9	-1,447.0	976.0	0.00	0.00	0.00	0.00	
5,771.5	25.62	179.00	5,330.3	-1,727.3	1,064.4	2.00	0.00	4.68	104.97	
6,628.3	25.62	179.00	6,102.9	-2,097.7	1,070.8	0.00	0.00	0.00	0.00	
7,159.1	15.00	179.00	6,600.0	-2,281.6	1,074.0	2.00	-2.00	0.00	-179.99	DRILL TARGET 15
8,350.4	6.07	179.00	7,770.0	-2,499.1	1,077.8	0.75	-0.75	0.00	180.00	

Database:	Landmark	Local Co-ordinate Reference:	Well REI H09-24D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4842.0ft (Original Well Elev)
Project:	SEC.9-T3N-R65W	MD Reference:	WELL @ 4842.0ft (Original Well Elev)
Site:	REI H09-31D Pad Sec.9-T3N-R65W	North Reference:	True
Well:	REI H09-24D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble REI H09-24D Plan #2 (1-12-12)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
280.0	0.00	0.00	280.0	0.0	0.0	0.0	0.00	0.00	0.00
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00
360.0	0.00	0.00	360.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
440.0	0.80	146.00	440.0	-0.2	0.2	0.3	2.00	2.00	0.00
480.0	1.60	146.00	480.0	-0.9	0.6	1.1	2.00	2.00	0.00
520.0	2.40	146.00	520.0	-2.1	1.4	2.5	2.00	2.00	0.00
560.0	3.20	146.00	559.9	-3.7	2.5	4.4	2.00	2.00	0.00
600.0	4.00	146.00	599.8	-5.8	3.9	6.9	2.00	2.00	0.00
640.0	4.80	146.00	639.7	-8.3	5.6	9.9	2.00	2.00	0.00
650.3	5.01	146.00	650.0	-9.1	6.1	10.7	2.00	2.00	0.00
8 5/8"									
680.0	5.60	146.00	679.6	-11.3	7.6	13.4	2.00	2.00	0.00
720.0	6.40	146.00	719.3	-14.8	10.0	17.5	2.00	2.00	0.00
760.0	7.20	146.00	759.1	-18.7	12.6	22.2	2.00	2.00	0.00
800.0	8.00	146.00	798.7	-23.1	15.6	27.4	2.00	2.00	0.00
840.0	8.80	146.00	838.3	-28.0	18.9	33.1	2.00	2.00	0.00
880.0	9.60	146.00	877.8	-33.3	22.4	39.4	2.00	2.00	0.00
920.0	10.40	146.00	917.1	-39.0	26.3	46.3	2.00	2.00	0.00
960.0	11.20	146.00	956.4	-45.2	30.5	53.6	2.00	2.00	0.00
1,000.0	12.00	146.00	995.6	-51.9	35.0	61.5	2.00	2.00	0.00
1,040.0	12.80	146.00	1,034.7	-59.0	39.8	70.0	2.00	2.00	0.00
1,080.0	13.60	146.00	1,073.6	-66.6	44.9	78.9	2.00	2.00	0.00
1,120.0	14.40	146.00	1,112.4	-74.6	50.3	88.4	2.00	2.00	0.00
1,160.0	15.20	146.00	1,151.1	-83.1	56.0	98.5	2.00	2.00	0.00
1,200.0	16.00	146.00	1,189.6	-92.0	62.1	109.1	2.00	2.00	0.00
1,240.0	16.80	146.00	1,228.0	-101.4	68.4	120.2	2.00	2.00	0.00
1,280.0	17.60	146.00	1,266.2	-111.2	75.0	131.8	2.00	2.00	0.00
1,320.0	18.40	146.00	1,304.3	-121.4	81.9	143.9	2.00	2.00	0.00
1,360.0	19.20	146.00	1,342.1	-132.1	89.1	156.6	2.00	2.00	0.00
1,400.0	20.00	146.00	1,379.8	-143.2	96.6	169.8	2.00	2.00	0.00
1,440.0	20.80	146.00	1,417.3	-154.8	104.4	183.5	2.00	2.00	0.00
1,480.0	21.60	146.00	1,454.6	-166.8	112.5	197.7	2.00	2.00	0.00
1,520.0	22.40	146.00	1,491.7	-179.2	120.9	212.4	2.00	2.00	0.00
1,560.0	23.20	146.00	1,528.6	-192.1	129.5	227.7	2.00	2.00	0.00
1,600.0	24.00	146.00	1,565.2	-205.3	138.5	243.4	2.00	2.00	0.00
1,640.0	24.80	146.00	1,601.6	-219.0	147.7	259.6	2.00	2.00	0.00
1,680.0	25.60	146.00	1,637.8	-233.1	157.3	276.4	2.00	2.00	0.00
1,681.0	25.62	146.00	1,638.7	-233.5	157.5	276.8	2.00	2.00	0.00
1,720.0	25.62	146.00	1,673.9	-247.5	166.9	293.4	0.00	0.00	0.00
1,760.0	25.62	146.00	1,710.0	-261.8	176.6	310.4	0.00	0.00	0.00
1,800.0	25.62	146.00	1,746.0	-276.2	186.3	327.4	0.00	0.00	0.00
1,840.0	25.62	146.00	1,782.1	-290.5	195.9	344.4	0.00	0.00	0.00
1,880.0	25.62	146.00	1,818.2	-304.8	205.6	361.3	0.00	0.00	0.00
1,920.0	25.62	146.00	1,854.2	-319.2	215.3	378.3	0.00	0.00	0.00
1,960.0	25.62	146.00	1,890.3	-333.5	225.0	395.3	0.00	0.00	0.00
2,000.0	25.62	146.00	1,926.4	-347.9	234.6	412.3	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well REI H09-24D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4842.0ft (Original Well Elev)
Project:	SEC.9-T3N-R65W	MD Reference:	WELL @ 4842.0ft (Original Well Elev)
Site:	REI H09-31D Pad Sec.9-T3N-R65W	North Reference:	True
Well:	REI H09-24D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble REI H09-24D Plan #2 (1-12-12)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
2,040.0	25.62	146.00	1,962.4	-362.2	244.3	429.3	0.00	0.00	0.00
2,080.0	25.62	146.00	1,998.5	-376.5	254.0	446.3	0.00	0.00	0.00
2,120.0	25.62	146.00	2,034.6	-390.9	263.7	463.3	0.00	0.00	0.00
2,160.0	25.62	146.00	2,070.6	-405.2	273.3	480.3	0.00	0.00	0.00
2,200.0	25.62	146.00	2,106.7	-419.6	283.0	497.3	0.00	0.00	0.00
2,240.0	25.62	146.00	2,142.8	-433.9	292.7	514.3	0.00	0.00	0.00
2,280.0	25.62	146.00	2,178.8	-448.2	302.3	531.3	0.00	0.00	0.00
2,320.0	25.62	146.00	2,214.9	-462.6	312.0	548.3	0.00	0.00	0.00
2,360.0	25.62	146.00	2,251.0	-476.9	321.7	565.3	0.00	0.00	0.00
2,400.0	25.62	146.00	2,287.0	-491.3	331.4	582.3	0.00	0.00	0.00
2,440.0	25.62	146.00	2,323.1	-505.6	341.0	599.3	0.00	0.00	0.00
2,480.0	25.62	146.00	2,359.2	-519.9	350.7	616.3	0.00	0.00	0.00
2,520.0	25.62	146.00	2,395.2	-534.3	360.4	633.3	0.00	0.00	0.00
2,560.0	25.62	146.00	2,431.3	-548.6	370.0	650.3	0.00	0.00	0.00
2,600.0	25.62	146.00	2,467.4	-562.9	379.7	667.3	0.00	0.00	0.00
2,640.0	25.62	146.00	2,503.4	-577.3	389.4	684.3	0.00	0.00	0.00
2,680.0	25.62	146.00	2,539.5	-591.6	399.1	701.3	0.00	0.00	0.00
2,720.0	25.62	146.00	2,575.6	-606.0	408.7	718.3	0.00	0.00	0.00
2,760.0	25.62	146.00	2,611.7	-620.3	418.4	735.3	0.00	0.00	0.00
2,800.0	25.62	146.00	2,647.7	-634.6	428.1	752.3	0.00	0.00	0.00
2,840.0	25.62	146.00	2,683.8	-649.0	437.7	769.3	0.00	0.00	0.00
2,880.0	25.62	146.00	2,719.9	-663.3	447.4	786.3	0.00	0.00	0.00
2,920.0	25.62	146.00	2,755.9	-677.7	457.1	803.3	0.00	0.00	0.00
2,960.0	25.62	146.00	2,792.0	-692.0	466.8	820.3	0.00	0.00	0.00
3,000.0	25.62	146.00	2,828.1	-706.3	476.4	837.3	0.00	0.00	0.00
3,040.0	25.62	146.00	2,864.1	-720.7	486.1	854.3	0.00	0.00	0.00
3,080.0	25.62	146.00	2,900.2	-735.0	495.8	871.3	0.00	0.00	0.00
3,120.0	25.62	146.00	2,936.3	-749.4	505.4	888.3	0.00	0.00	0.00
3,160.0	25.62	146.00	2,972.3	-763.7	515.1	905.3	0.00	0.00	0.00
3,200.0	25.62	146.00	3,008.4	-778.0	524.8	922.3	0.00	0.00	0.00
3,240.0	25.62	146.00	3,044.5	-792.4	534.5	939.2	0.00	0.00	0.00
3,280.0	25.62	146.00	3,080.5	-806.7	544.1	956.2	0.00	0.00	0.00
3,320.0	25.62	146.00	3,116.6	-821.0	553.8	973.2	0.00	0.00	0.00
3,360.0	25.62	146.00	3,152.7	-835.4	563.5	990.2	0.00	0.00	0.00
3,400.0	25.62	146.00	3,188.7	-849.7	573.1	1,007.2	0.00	0.00	0.00
3,440.0	25.62	146.00	3,224.8	-864.1	582.8	1,024.2	0.00	0.00	0.00
3,480.0	25.62	146.00	3,260.9	-878.4	592.5	1,041.2	0.00	0.00	0.00
3,520.0	25.62	146.00	3,296.9	-892.7	602.2	1,058.2	0.00	0.00	0.00
3,560.0	25.62	146.00	3,333.0	-907.1	611.8	1,075.2	0.00	0.00	0.00
3,600.0	25.62	146.00	3,369.1	-921.4	621.5	1,092.2	0.00	0.00	0.00
3,640.0	25.62	146.00	3,405.1	-935.8	631.2	1,109.2	0.00	0.00	0.00
3,680.0	25.62	146.00	3,441.2	-950.1	640.9	1,126.2	0.00	0.00	0.00
3,720.0	25.62	146.00	3,477.3	-964.4	650.5	1,143.2	0.00	0.00	0.00
3,760.0	25.62	146.00	3,513.3	-978.8	660.2	1,160.2	0.00	0.00	0.00
3,800.0	25.62	146.00	3,549.4	-993.1	669.9	1,177.2	0.00	0.00	0.00
3,840.0	25.62	146.00	3,585.5	-1,007.5	679.5	1,194.2	0.00	0.00	0.00
3,880.0	25.62	146.00	3,621.5	-1,021.8	689.2	1,211.2	0.00	0.00	0.00
3,920.0	25.62	146.00	3,657.6	-1,036.1	698.9	1,228.2	0.00	0.00	0.00
3,960.0	25.62	146.00	3,693.7	-1,050.5	708.6	1,245.2	0.00	0.00	0.00
4,000.0	25.62	146.00	3,729.7	-1,064.8	718.2	1,262.2	0.00	0.00	0.00
4,040.0	25.62	146.00	3,765.8	-1,079.2	727.9	1,279.2	0.00	0.00	0.00
4,080.0	25.62	146.00	3,801.9	-1,093.5	737.6	1,296.2	0.00	0.00	0.00
4,120.0	25.62	146.00	3,837.9	-1,107.8	747.2	1,313.2	0.00	0.00	0.00
4,160.0	25.62	146.00	3,874.0	-1,122.2	756.9	1,330.2	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well REI H09-24D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4842.0ft (Original Well Elev)
Project:	SEC.9-T3N-R65W	MD Reference:	WELL @ 4842.0ft (Original Well Elev)
Site:	REI H09-31D Pad Sec.9-T3N-R65W	North Reference:	True
Well:	REI H09-24D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble REI H09-24D Plan #2 (1-12-12)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,200.0	25.62	146.00	3,910.1	-1,136.5	766.6	1,347.2	0.00	0.00	0.00
4,240.0	25.62	146.00	3,946.1	-1,150.8	776.3	1,364.2	0.00	0.00	0.00
4,280.0	25.62	146.00	3,982.2	-1,165.2	785.9	1,381.2	0.00	0.00	0.00
4,320.0	25.62	146.00	4,018.3	-1,179.5	795.6	1,398.2	0.00	0.00	0.00
4,360.0	25.62	146.00	4,054.3	-1,193.9	805.3	1,415.2	0.00	0.00	0.00
4,400.0	25.62	146.00	4,090.4	-1,208.2	814.9	1,432.2	0.00	0.00	0.00
4,440.0	25.62	146.00	4,126.5	-1,222.5	824.6	1,449.2	0.00	0.00	0.00
4,480.0	25.62	146.00	4,162.5	-1,236.9	834.3	1,466.2	0.00	0.00	0.00
4,520.0	25.62	146.00	4,198.6	-1,251.2	844.0	1,483.1	0.00	0.00	0.00
4,560.0	25.62	146.00	4,234.7	-1,265.6	853.6	1,500.1	0.00	0.00	0.00
4,600.0	25.62	146.00	4,270.7	-1,279.9	863.3	1,517.1	0.00	0.00	0.00
4,640.0	25.62	146.00	4,306.8	-1,294.2	873.0	1,534.1	0.00	0.00	0.00
4,680.0	25.62	146.00	4,342.9	-1,308.6	882.6	1,551.1	0.00	0.00	0.00
4,720.0	25.62	146.00	4,378.9	-1,322.9	892.3	1,568.1	0.00	0.00	0.00
4,760.0	25.62	146.00	4,415.0	-1,337.3	902.0	1,585.1	0.00	0.00	0.00
4,800.0	25.62	146.00	4,451.1	-1,351.6	911.7	1,602.1	0.00	0.00	0.00
4,840.0	25.62	146.00	4,487.1	-1,365.9	921.3	1,619.1	0.00	0.00	0.00
4,880.0	25.62	146.00	4,523.2	-1,380.3	931.0	1,636.1	0.00	0.00	0.00
4,920.0	25.62	146.00	4,559.3	-1,394.6	940.7	1,653.1	0.00	0.00	0.00
4,960.0	25.62	146.00	4,595.4	-1,409.0	950.3	1,670.1	0.00	0.00	0.00
5,000.0	25.62	146.00	4,631.4	-1,423.3	960.0	1,687.1	0.00	0.00	0.00
5,040.0	25.62	146.00	4,667.5	-1,437.6	969.7	1,704.1	0.00	0.00	0.00
5,066.0	25.62	146.00	4,690.9	-1,447.0	976.0	1,715.2	0.00	0.00	0.00
5,080.0	25.55	146.63	4,703.6	-1,452.0	979.3	1,721.1	2.00	-0.51	4.48
5,120.0	25.36	148.44	4,739.7	-1,466.5	988.6	1,738.1	2.00	-0.47	4.52
5,160.0	25.20	150.27	4,775.8	-1,481.2	997.3	1,755.0	2.00	-0.41	4.58
5,200.0	25.05	152.12	4,812.1	-1,496.1	1,005.5	1,771.9	2.00	-0.36	4.64
5,240.0	24.93	154.00	4,848.3	-1,511.1	1,013.1	1,788.8	2.00	-0.30	4.68
5,280.0	24.84	155.88	4,884.6	-1,526.4	1,020.2	1,805.6	2.00	-0.24	4.72
5,320.0	24.77	157.78	4,920.9	-1,541.8	1,026.8	1,822.4	2.00	-0.18	4.75
5,360.0	24.72	159.69	4,957.2	-1,557.4	1,032.9	1,839.1	2.00	-0.12	4.77
5,400.0	24.69	161.60	4,993.6	-1,573.2	1,038.4	1,855.8	2.00	-0.06	4.78
5,440.0	24.69	163.52	5,029.9	-1,589.1	1,043.5	1,872.4	2.00	0.00	4.79
5,480.0	24.72	165.43	5,066.3	-1,605.2	1,047.9	1,889.0	2.00	0.06	4.78
5,520.0	24.77	167.34	5,102.6	-1,621.5	1,051.9	1,905.5	2.00	0.12	4.77
5,560.0	24.84	169.24	5,138.9	-1,637.9	1,055.3	1,921.9	2.00	0.18	4.75
5,600.0	24.94	171.13	5,175.2	-1,654.5	1,058.1	1,938.3	2.00	0.24	4.72
5,640.0	25.06	173.00	5,211.4	-1,671.2	1,060.5	1,954.6	2.00	0.30	4.68
5,680.0	25.20	174.85	5,247.7	-1,688.1	1,062.3	1,970.8	2.00	0.36	4.63
5,720.0	25.37	176.68	5,283.8	-1,705.2	1,063.5	1,986.9	2.00	0.42	4.58
5,760.0	25.56	178.49	5,319.9	-1,722.3	1,064.3	2,003.0	2.00	0.47	4.52
5,771.5	25.62	179.00	5,330.3	-1,727.3	1,064.4	2,007.6	2.00	0.51	4.48
5,800.0	25.62	179.00	5,356.0	-1,739.6	1,064.6	2,019.0	0.00	0.00	0.00
5,840.0	25.62	179.00	5,392.1	-1,756.9	1,064.9	2,035.0	0.00	0.00	0.00
5,880.0	25.62	179.00	5,428.1	-1,774.2	1,065.2	2,051.0	0.00	0.00	0.00
5,920.0	25.62	179.00	5,464.2	-1,791.5	1,065.5	2,067.0	0.00	0.00	0.00
5,960.0	25.62	179.00	5,500.3	-1,808.8	1,065.8	2,083.0	0.00	0.00	0.00
6,000.0	25.62	179.00	5,536.4	-1,826.1	1,066.1	2,099.0	0.00	0.00	0.00
6,040.0	25.62	179.00	5,572.4	-1,843.4	1,066.4	2,115.0	0.00	0.00	0.00
6,080.0	25.62	179.00	5,608.5	-1,860.7	1,066.7	2,131.0	0.00	0.00	0.00
6,120.0	25.62	179.00	5,644.6	-1,877.9	1,067.0	2,147.0	0.00	0.00	0.00
6,160.0	25.62	179.00	5,680.6	-1,895.2	1,067.3	2,162.9	0.00	0.00	0.00
6,200.0	25.62	179.00	5,716.7	-1,912.5	1,067.6	2,178.9	0.00	0.00	0.00
6,240.0	25.62	179.00	5,752.8	-1,929.8	1,067.9	2,194.9	0.00	0.00	0.00

Database: Landmark
 Company: NOBLE ENERGY INC WELD COUNTY CO
 Project: SEC.9-T3N-R65W
 Site: REI H09-31D Pad Sec.9-T3N-R65W
 Well: REI H09-24D
 Wellbore: Wellbore #1
 Design: Noble REI H09-24D Plan #2 (1-12-12)

Local Co-ordinate Reference: Well REI H09-24D
 TVD Reference: WELL @ 4842.0ft (Original Well Elev)
 MD Reference: WELL @ 4842.0ft (Original Well Elev)
 North Reference: True
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
6,280.0	25.62	179.00	5,788.8	-1,947.1	1,068.2	2,210.9	0.00	0.00	0.00
6,320.0	25.62	179.00	5,824.9	-1,964.4	1,068.5	2,226.9	0.00	0.00	0.00
6,360.0	25.62	179.00	5,861.0	-1,981.7	1,068.8	2,242.9	0.00	0.00	0.00
6,400.0	25.62	179.00	5,897.0	-1,999.0	1,069.1	2,258.9	0.00	0.00	0.00
6,440.0	25.62	179.00	5,933.1	-2,016.3	1,069.4	2,274.9	0.00	0.00	0.00
6,480.0	25.62	179.00	5,969.2	-2,033.6	1,069.7	2,290.9	0.00	0.00	0.00
6,520.0	25.62	179.00	6,005.2	-2,050.9	1,070.0	2,306.9	0.00	0.00	0.00
6,560.0	25.62	179.00	6,041.3	-2,068.1	1,070.3	2,322.9	0.00	0.00	0.00
6,600.0	25.62	179.00	6,077.4	-2,085.4	1,070.6	2,338.9	0.00	0.00	0.00
6,628.3	25.62	179.00	6,102.9	-2,097.7	1,070.8	2,350.2	0.00	0.00	0.00
6,640.0	25.38	179.00	6,113.5	-2,102.7	1,070.9	2,354.9	2.00	-2.00	0.00
6,680.0	24.58	179.00	6,149.7	-2,119.6	1,071.2	2,370.5	2.00	-2.00	0.00
6,720.0	23.78	179.00	6,186.2	-2,136.0	1,071.5	2,385.7	2.00	-2.00	0.00
6,760.0	22.98	179.00	6,222.9	-2,151.8	1,071.7	2,400.3	2.00	-2.00	0.00
6,800.0	22.18	179.00	6,259.9	-2,167.2	1,072.0	2,414.6	2.00	-2.00	0.00
6,840.0	21.38	179.00	6,297.0	-2,182.0	1,072.3	2,428.3	2.00	-2.00	0.00
6,880.0	20.58	179.00	6,334.3	-2,196.4	1,072.5	2,441.5	2.00	-2.00	0.00
6,920.0	19.78	179.00	6,371.9	-2,210.2	1,072.8	2,454.3	2.00	-2.00	0.00
6,960.0	18.98	179.00	6,409.6	-2,223.4	1,073.0	2,466.6	2.00	-2.00	0.00
7,000.0	18.18	179.00	6,447.5	-2,236.2	1,073.2	2,478.4	2.00	-2.00	0.00
7,040.0	17.38	179.00	6,485.6	-2,248.4	1,073.4	2,489.7	2.00	-2.00	0.00
7,080.0	16.58	179.00	6,523.9	-2,260.1	1,073.6	2,500.5	2.00	-2.00	0.00
7,120.0	15.78	179.00	6,562.3	-2,271.2	1,073.8	2,510.8	2.00	-2.00	0.00
7,159.1	15.00	179.00	6,600.0	-2,281.6	1,074.0	2,520.4	2.00	-2.00	0.00
DRILL TARGET 1538'FSL, 2500'FWL									
7,160.0	14.99	179.00	6,600.9	-2,281.8	1,074.0	2,520.6	0.75	-0.75	0.00
7,200.0	14.69	179.00	6,639.5	-2,292.1	1,074.2	2,530.1	0.75	-0.75	0.00
7,213.7	14.59	179.00	6,652.8	-2,295.5	1,074.2	2,533.3	0.75	-0.75	0.00
TARGET BHL 1320'FSL & 2504'FWL									
7,240.0	14.39	179.00	6,678.2	-2,302.1	1,074.4	2,539.4	0.75	-0.75	0.00
7,280.0	14.09	179.00	6,717.0	-2,312.0	1,074.5	2,548.5	0.75	-0.75	0.00
7,320.0	13.79	179.00	6,755.8	-2,321.6	1,074.7	2,557.4	0.75	-0.75	0.00
7,360.0	13.49	179.00	6,794.7	-2,331.0	1,074.9	2,566.1	0.75	-0.75	0.00
7,400.0	13.19	179.00	6,833.6	-2,340.3	1,075.0	2,574.7	0.75	-0.75	0.00
7,440.0	12.89	179.00	6,872.6	-2,349.3	1,075.2	2,583.0	0.75	-0.75	0.00
7,445.5	12.85	179.00	6,878.0	-2,350.5	1,075.2	2,584.1	0.75	-0.75	0.00
NIOBRARA									
7,478.3	12.61	179.00	6,909.9	-2,357.7	1,075.3	2,590.8	0.75	-0.75	0.00
TARGET CIRCLE 1320'FSL & 2504'FWL									
7,480.0	12.59	179.00	6,911.6	-2,358.1	1,075.3	2,591.2	0.75	-0.75	0.00
7,520.0	12.29	179.00	6,950.7	-2,366.7	1,075.5	2,599.1	0.75	-0.75	0.00
7,560.0	11.99	179.00	6,989.8	-2,375.1	1,075.6	2,606.9	0.75	-0.75	0.00
7,600.0	11.69	179.00	7,028.9	-2,383.3	1,075.8	2,614.5	0.75	-0.75	0.00
7,640.0	11.39	179.00	7,068.1	-2,391.4	1,075.9	2,621.9	0.75	-0.75	0.00
7,680.0	11.09	179.00	7,107.4	-2,399.1	1,076.1	2,629.1	0.75	-0.75	0.00
7,720.0	10.79	179.00	7,146.6	-2,406.7	1,076.2	2,636.2	0.75	-0.75	0.00
7,739.7	10.65	179.00	7,166.0	-2,410.4	1,076.2	2,639.6	0.75	-0.75	0.00
CODELL									
7,760.0	10.49	179.00	7,185.9	-2,414.1	1,076.3	2,643.0	0.75	-0.75	0.00
7,800.0	10.19	179.00	7,225.3	-2,421.3	1,076.4	2,649.6	0.75	-0.75	0.00
7,840.0	9.89	179.00	7,264.7	-2,428.3	1,076.6	2,656.1	0.75	-0.75	0.00
7,880.0	9.59	179.00	7,304.1	-2,435.1	1,076.7	2,662.4	0.75	-0.75	0.00
7,920.0	9.29	179.00	7,343.6	-2,441.6	1,076.8	2,668.4	0.75	-0.75	0.00
7,960.0	8.99	179.00	7,383.0	-2,448.0	1,076.9	2,674.3	0.75	-0.75	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well REI H09-24D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4842.0ft (Original Well Elev)
Project:	SEC.9-T3N-R65W	MD Reference:	WELL @ 4842.0ft (Original Well Elev)
Site:	REI H09-31D Pad Sec.9-T3N-R65W	North Reference:	True
Well:	REI H09-24D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble REI H09-24D Plan #2 (1-12-12)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,000.0	8.69	179.00	7,422.6	-2,454.1	1,077.0	2,680.0	0.75	-0.75	0.00
8,040.0	8.39	179.00	7,462.1	-2,460.1	1,077.1	2,685.5	0.75	-0.75	0.00
8,080.0	8.09	179.00	7,501.7	-2,465.8	1,077.2	2,690.8	0.75	-0.75	0.00
8,120.0	7.79	179.00	7,541.3	-2,471.3	1,077.3	2,695.9	0.75	-0.75	0.00
8,143.9	7.61	179.00	7,565.0	-2,474.5	1,077.4	2,698.9	0.75	-0.75	0.00
D-SAND									
8,160.0	7.49	179.00	7,581.0	-2,476.6	1,077.4	2,700.8	0.75	-0.75	0.00
8,199.4	7.20	179.00	7,620.0	-2,481.7	1,077.5	2,705.5	0.75	-0.75	0.00
J-SAND									
8,200.0	7.19	179.00	7,620.6	-2,481.8	1,077.5	2,705.6	0.75	-0.75	0.00
8,240.0	6.89	179.00	7,660.3	-2,486.7	1,077.6	2,710.1	0.75	-0.75	0.00
8,280.0	6.59	179.00	7,700.1	-2,491.4	1,077.7	2,714.4	0.75	-0.75	0.00
8,320.0	6.29	179.00	7,739.8	-2,495.8	1,077.7	2,718.6	0.75	-0.75	0.00
8,350.4	6.07	179.00	7,770.0	-2,499.1	1,077.8	2,721.6	0.75	-0.75	0.00
HARDLINE 75'E OF BHL									

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
TARGET CIRCLE 132	0.00	0.00	6,878.0	-2,499.1	1,077.7	1,329,999.08	3,232,061.91	40.236260	-104.668770
- plan misses target center by 144.9ft at 7478.3ft MD (6909.9 TVD, -2357.7 N, 1075.3 E)									
- Circle (radius 75.0)									
HARDLINE 75'E OF I	0.00	0.00	7,770.0	-2,599.1	1,152.7	1,329,899.77	3,232,137.84	40.235985	-104.668501
- plan misses target center by 124.9ft at 8350.4ft MD (7770.0 TVD, -2499.1 N, 1077.8 E)									
- Polygon									
Point 1			7,770.0	0.0	0.0	1,329,899.77	3,232,137.84		
Point 2			7,770.0	400.0	0.0	1,330,299.73	3,232,134.11		
TARGET BHL 1320'F:	0.00	0.00	6,600.0	-2,499.1	1,077.7	1,329,999.08	3,232,061.91	40.236260	-104.668770
- plan misses target center by 210.3ft at 7213.7ft MD (6652.8 TVD, -2295.5 N, 1074.2 E)									
- Point									
DRILL TARGET 1538	0.00	0.00	6,600.0	-2,281.6	1,074.0	1,330,216.50	3,232,056.19	40.236857	-104.668783
- plan hits target center									
- Point									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
650.3	650.0	8 5/8"	8-5/8	12-1/4

Database:	Landmark	Local Co-ordinate Reference:	Well REI H09-24D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4842.0ft (Original Well Elev)
Project:	SEC.9-T3N-R65W	MD Reference:	WELL @ 4842.0ft (Original Well Elev)
Site:	REI H09-31D Pad Sec.9-T3N-R65W	North Reference:	True
Well:	REI H09-24D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble REI H09-24D Plan #2 (1-12-12)		

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
7,445.5	6,878.0	NIOBRARA		0.00	
7,739.7	7,166.0	CODELL		0.00	
8,143.9	7,565.0	D-SAND		0.00	
8,199.4	7,620.0	J-SAND		0.00	