

Whiting Oil and Gas Corporation

Weld County, CO

Sec. 27-T10N-R58W (#27 J Pad)

Razor #27J-3410B

Plan D

Rev D0

Sperry Drilling Services

Clearance Summary Anticollision Report

26 August, 2014

Closest Approach 3D Proximity Scan on Current Survey Data (Highside Reference)

Reference Design: Sec. 27-T10N-R58W (#27 J Pad) - Razor #27J-3410B - Plan D - Rev D0

Well Coordinates: 1,541,618.75 N, 3,457,072.13 E (40° 48' 30.40" N, 103° 50' 55.77" W)

Datum Height: KB 22 ft @ 4786.00usft (Frontier 26)

Scan Range: 0.00 to 13,280.98 usft. Measured Depth.

Scan Radius is 20,000.00 usft . Clearance Factor cutoff is Unlimited. Max Ellipse Separation is Unlimited

Geodetic Scale Factor Applied

Version: 5000.1 Build: 70

HALLIBURTON

Anticollision Report for Razor #27J-3410B - Rev D0

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Site Name	Measured Depth (usft)	Minimum Distance (usft)	@Measured Depth (usft)	Ellipse Separation (usft)	@Measured Depth usft	Clearance Factor	Summary Based on Minimum
Comparison Well Name - Wellbore Name - Design							
Sec. 27-T10N-R58W							
Razor #27I-2213A - Existing Well - Existing Well_Custo	4,600.00	1,369.31	4,600.00	1,351.74	4,414.00	77.956	Clearance Factor
Razor #27I-2213A - ST-1_Existing Well - ST-1_Existing	5,450.00	1,015.08	5,450.00	983.87	6,112.05	32.529	Clearance Factor
Razor #27I-2213A - ST-1_Existing Well - ST-1_Existing	5,542.80	1,007.87	5,542.80	977.39	6,089.00	33.068	Ellipse Separation
Razor #27I-3413A - Existing Well - Existing Well_Custo	7,547.78	979.36	7,547.78	936.59	6,813.65	22.895	Centre Distance
Razor #27I-3413A - Existing Well - Existing Well_Custo	13,235.14	1,006.62	13,235.14	810.22	12,505.00	5.125	Ellipse Separation
Razor #27I-3413A - Existing Well - Existing Well_Custo	13,280.98	1,007.68	13,280.98	810.83	12,505.00	5.119	Clearance Factor
Razor #27K-3408B - Existing Well - Existing Well_Cus	11,030.16	658.59	11,030.16	524.76	10,168.64	4.921	Centre Distance
Razor #27K-3408B - Existing Well - Existing Well_Cus	13,249.36	661.12	13,249.36	466.35	12,390.00	3.394	Ellipse Separation
Razor #27K-3408B - Existing Well - Existing Well_Cus	13,280.98	661.87	13,280.98	466.80	12,390.00	3.393	Clearance Factor
Sec. 27-T10N-R58W (#27 J Pad)							
Razor #27J-2209A (Not Approved) - Plan C - Rev C (In	1,676.25	32.49	1,676.25	22.75	1,674.87	3.335	Clearance Factor
Razor #27J-2210B (Not Approved) - Plan B - Rev B0	937.31	21.90	937.31	13.37	937.06	2.568	Clearance Factor
Razor #27J-2211A (Not Approved) - Plan B - Rev B0	5,836.52	109.61	5,836.52	89.40	5,906.42	5.423	Clearance Factor
Razor #27J-3409A (Not Approved) - Plan B - Rev B0	850.65	77.20	850.65	68.84	853.57	9.239	Centre Distance
Razor #27J-3409A (Not Approved) - Plan B - Rev B0	1,000.00	77.44	1,000.00	68.77	1,002.84	8.932	Ellipse Separation
Razor #27J-3409A (Not Approved) - Plan B - Rev B0	13,280.98	335.30	13,280.98	194.46	13,278.07	2.381	Clearance Factor
Razor #27J-3410B - Plan C - Actual Field Surveys	2,823.00	0.00	2,823.00	-8.98	2,823.00	0.000	Clearance Factor
Razor #27J-3410B - Plan C - Actual Field Surveys	2,868.08	0.25	2,868.08	-9.76	2,868.08	0.025	Ellipse Separation
Razor #27J-3411A (Not Approved) - Plan B - Rev B0	13,280.98	335.67	13,280.98	194.71	13,289.69	2.381	Clearance Factor
Razor #27J-3412B - Plan B - Actual Field Surveys	13,280.98	648.70	13,280.98	510.42	13,485.13	4.691	Clearance Factor
Sec. 4-T9N-R58W							
Rohn State #LD04-68HN - Existing Well - Existing Wel	13,280.98	1,128.53	13,280.98	1,035.79	13,348.66	12.168	Clearance Factor

Anticollision Report for Razor #27J-3410B - Rev D0

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
177.00	1,552.00		MWD+IFR1+MS+sag
1,635.00	2,823.00		MWD+IFR1+MS+sag
2,823.00	6,094.22	Rev D0	MWD+IFR1+MS+sag
6,094.22	13,280.98	Rev D0	MWD+IFR1+MS+sag

Anticollision Info

Error Model: ISCWSA
Scan Method: Closest Approach 3D

Output errors are at 2.00 sigma

Ellipse error terms are correlated across survey tool tie-on points.

Calculated ellipses incorporate surface errors.

Separation is the actual distance between ellipsoids.

Distance Between centres is the straight line distance between wellbore centres.

Clearance Factor = Distance Between Profiles / (Distance Between Profiles - Ellipse Separation).

All station coordinates were calculated using the Minimum Curvature method.

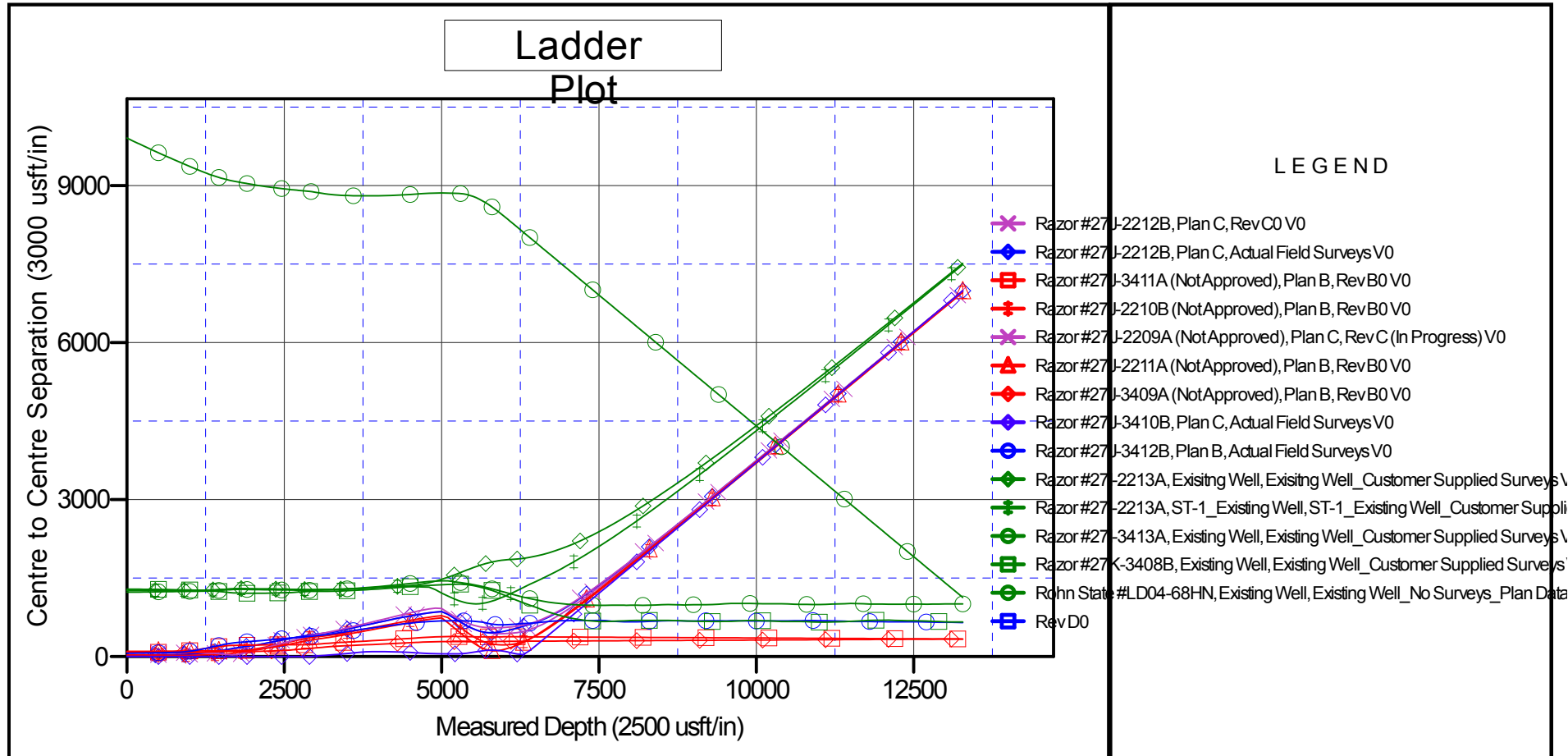
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Direction and Coordinates are relative to True North Reference.

Vertical Depths are relative to KB 22 ft @ 4786.00usft (Frontier 26). Northing and Easting are relative to Razor #27J-3410B.

Coordinate System is US State Plane 1983, Colorado Northern Zone.

Central Meridian is -105.00°, Grid Convergence at Surface is: 1.07°.



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Clearance Factor Plot: Measured Depth versus Separation(Clearance) Factor

