

Schuh 3-65 21-20 4AH Plan #0 Anti-Collision Summary Report

Analysis Date-24hr Time: March 03, 2020 - 11:58

Client: Crestone Peak Resources

Field: CO, Adams County (NAD 83 NZ)

Structure: Crestone Peak 21-03S-65W (Shuh Pad)

Slot: Schuh 3-65 21-20 4AH

Well: Schuh 3-65 21-20 4AH

Borehole: Original Hole

Scan MD Range: 0.00ft - 18288.40ft

Analysis Method: 3D Least Distance

Reference Trajectory: Schuh 3-65 21-20 4AH Plan #0 (Def Plan)

Depth Interval: Every 10.00 Measured Depth (ft)

Rule Set: D&M AntiCollision Standard S002 v5.1/5.2

Min Pts: All local minima indicated.

Version / Patch: 2.10.787.0

Database \ Project: us1164app01\drilling-CO, Adams County 2.10

Trajectory Error Model: ISCSA0 3-D 95.000% Confidence 2.7955 sigma, for subject well. For offset wells, error model version is specified with each well respectively.

Offset Trajectories Summary

Offset Selection Criteria

Wellhead distance scan: Not performed!

Selection filters: Definitive Surveys - Definitive Plans - Definitive surveys exclude definitive plans

- All Non-Def Surveys when no Def-Survey is set in a borehole - All Non-Def Plans when no Def-Plan is set in a borehole

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		

Results highlighted: Sep-Factor separation <= 1.50 ft

Schuh 3-65 21-20 3BH Plan #0 (Def Plan)

Warning Alert

31.33	25.26	30.35	6.08	N/A	MAS = 7.70 (m)	0.00	0.00	CtCt<=15m<15.00				Enter Alert	
31.33	25.26	30.34	6.07	N/A	MAS = 7.70 (m)	28.00	28.00					WRP	
31.33	25.26	16.94	6.07	2.28	MAS = 7.70 (m)	2300.00	2300.00					MinPts	
70.59	25.26	55.65	45.34	4.99	MAS = 7.70 (m)	2920.00	2915.37	OSF<5.00				Exit Alert	
682.43	205.68	544.98	476.75	4.99	OSF1.50	11750.00	7890.00	OSF<5.00				Enter Alert	
682.41	541.06	321.37	141.35	1.89	OSF1.50	18288.40	7890.00					MinPts	

Schuh 3-65 21-20 4BH Plan #0 (Def Plan)

Warning Alert

32.46	26.16	31.47	6.30	N/A	MAS = 7.97 (m)	0.00	0.00	CtCt<=15m<15.00				Enter Alert	
32.46	26.16	31.47	6.30	N/A	MAS = 7.97 (m)	28.00	28.00					WRP	
32.46	26.16	18.08	6.30	2.35	MAS = 7.97 (m)	2300.00	2300.00					MinPts	
69.39	26.16	54.54	43.23	4.93	MAS = 7.97 (m)	2960.00	2954.65	OSF<5.00				Exit Alert	
682.52	205.85	544.96	476.67	4.99	OSF1.50	11750.00	7890.00	OSF<5.00				Enter Alert	
682.75	541.67	321.30	141.08	1.89	OSF1.50	18288.40	7890.00					MinPts	

Schuh 3-65 21-20 3AH MWD 0' to 18028' - DRL (Def Survey)

Warning Alert

63.13	32.81	61.32	30.32	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	
63.02	32.81	61.21	30.21	N/A	MAS = 10.00 (m)	28.00	28.00					MinPts	
63.07	32.81	61.16	30.26	605.29	MAS = 10.00 (m)	60.00	60.00					MINPT-O-EOU	
74.34	32.81	65.92	41.53	10.97	MAS = 10.00 (m)	1540.00	1540.00					MINPT-O-EOU	
75.37	32.81	63.97	42.56	7.67	MAS = 10.00 (m)	2180.00	2180.00					MINPT-O-EOU	
75.14	32.81	63.90	42.33	7.63	MAS = 10.00 (m)	2310.00	2310.00					MinPt-O-SF	
75.14	32.81	63.90	42.33	7.63	MAS = 10.00 (m)	2320.00	2320.00					MinPts	
1364.02	50.37	1329.90	1313.64	41.90	OSF1.50	8690.00	7890.00					MinPt-O-SF	
1376.41	50.83	1341.99	1325.58	41.90	OSF1.50	8720.00	7890.00					MinPt-O-SF	
1378.95	87.44	1320.12	1291.51	24.07	OSF1.50	9080.00	7890.00					MinPt-CtCt	
1382.16	96.08	1317.57	1286.08	21.92	OSF1.50	9240.00	7890.00					MINPT-O-EOU	
1386.36	101.14	1318.40	1285.22	20.87	OSF1.50	9330.00	7890.00					MinPt-O-ADP	
1397.96	121.58	1316.37	1276.38	17.46	OSF1.50	9600.00	7890.00					MINPT-O-EOU	
1388.20	216.02	1243.65	1172.18	9.70	OSF1.50	10810.00	7890.00					MinPt-CtCt	
1403.02	255.02	1232.47	1148.00	8.30	OSF1.50	11360.00	7890.00					MINPT-O-EOU	
1387.88	356.04	1149.98	1031.84	5.87	OSF1.50	12610.00	7890.00					MinPt-CtCt	
1386.06	382.66	1130.42	1003.41	5.45	OSF1.50	12950.00	7890.00					MinPt-CtCt	
1399.53	421.48	1118.01	978.05	4.99	OSF1.50	13490.00	7890.00	OSF<5.00				Enter Alert	
1402.31	425.82	1117.90	976.49	4.95	OSF1.50	13550.00	7890.00					MINPT-O-EOU	
1362.44	557.67	990.12	804.77	3.67	OSF1.50	15180.00	7890.00					MinPt-CtCt	
1381.88	625.48	964.38	756.44	3.32	OSF1.50	16090.00	7890.00					MINPT-O-EOU	
1358.07	719.78	877.69	638.29	2.83	OSF1.50	17240.00	7890.00					MinPt-CtCt	
1354.58	783.60	831.64	570.98	2.60	OSF1.50	18050.00	7890.00					MinPt-CtCt	
1356.55	791.83	828.13	564.72	2.57	OSF1.50	18190.00	7890.00					MINPT-O-EOU	
1358.52	794.22	828.51	564.31	2.57	OSF1.50	18240.00	7890.00					MinPt-O-ADP	
1361.14	796.37	829.70	564.77	2.57	OSF1.50	18288.40	7890.00					MinPt-O-SF	

Emma E McVay 1 Blind 0' to 8831' - DA (Def Survey)

Warning Alert

7024.36	32.81	7022.55	6991.55	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	
7024.12	32.81	7022.28	6991.32	242527.93	MAS = 10.00 (m)	28.00	28.00					MinPt-O-SF	
7023.98	129.21	6937.31	6894.77	82.55	OSF1.50	2300.00	2300.00					MinPt-CtCt	
7026.27	136.32	6934.86	6889.95	78.21	OSF1.50	2420.00	2419.96					MINPT-O-EOU	
7029.73	140.47	6935.55	6889.26	75.92	OSF1.50	2490.00	2489.86					MinPt-O-ADP	
1759.73	531.04	1404.64	1228.70	4.99	OSF1.50	14940.00	7890.00	OSF<5.00				Enter Alert	
1723.77	538.75	1364.00	1185.03	4.81	OSF1.50	15290.00	7890.00					MinPt-CtCt	
1723.84	539.03	1363.91	1184.81	4.81	OSF1.50	15310.00	7890.00					MINPT-O-EOU	
1723.97	539.17	1363.95	1184.80	4.81	OSF1.50	15320.00	7890.00					MinPt-O-ADP	
1725.92	540.05	1365.35	1185.87	4.80	OSF1.50	15380.00	7890.00					MinPt-O-SF	
1802.25	541.98	1440.40	1260.28	5.00	OSF1.50	15820.00	7890.00	OSF<5.00				Exit Alert	
3455.16	501.43	3120.34	2953.73	10.36	OSF1.50	18288.40	7890.00					TD	

Bear 3-65 22-23 3DH GYRO+MWD 0' to 17995' - PR (Def Survey)

Pass

1072.61	32.81	1070.79	1039.80	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	
1071.57	32.81	1069.65	1038.76	9787.06	MAS = 10.00 (m)	28.00	28.00					MinPt-O-SF	
1066.50	32.81	1054.75	1033.69	107.10	MAS = 10.00 (m)	2070.00	2070.00					MinPts	
1066.54	32.81	1054.37	1033.74	102.74	MAS = 10.00 (m)	2180.00	2180.00					MINPT-O-EOU	
1066.56	32.81	1054.54	1033.75	102.26	MAS = 10.00 (m)	2200.00	2200.00					MinPts	
306.29	40.60	278.68	265.69	11.73	OSF1.50	6690.00	6617.62					MinPts	
306.32	40.65	278.69	265.67	11.71	OSF1.50	6700.00	6627.44					MinPt-O-ADP	
307.48	40.95	279.65	266.53	11.66	OSF1.50	6750.00	6676.54					MinPt-O-SF	
433.30	42.46	404.46	390.84	15.85	OSF1.50	7350.00	7268.72					MinPt-O-SF	
406.19	43.02	376.98	363.17	14.65	OSF1.50	7800.00	7667.75					MinPts	
407.04	43.21	377.69	363.82	14.62	OSF1.50	7830.00	7689.03					MinPt-O-SF	
10361.39	47.86	10328.95	10313.53	335.94	OSF1.50	18288.40	7890.00					TD	

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		
Bear 3-65 22-23 3CH GYRO+MWD 0' to 17968' - PR (Def Survey)													
												Pass	
	1027.84	32.81	1026.02	995.03	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	1026.75	32.81	1024.83	993.94	8984.86	MAS = 10.00 (m)	28.00	28.00				MinPt-O-SF	
	1022.73	32.81	1012.19	989.92	117.07	MAS = 10.00 (m)	1760.00	1760.00				MinPts	
	1023.38	32.81	1011.25	990.57	99.05	MAS = 10.00 (m)	2180.00	2180.00				MINPT-O-EOU	
	1023.41	32.81	1011.43	990.61	98.45	MAS = 10.00 (m)	2200.00	2200.00				MINPT-O-EOU	
	402.87	37.03	377.62	365.84	17.04	OSF1.50	6370.00	6303.37				MinPts	
	402.93	37.09	377.64	365.84	17.00	OSF1.50	6380.00	6313.19				MinPt-O-SF	
	407.77	37.80	382.04	369.98	16.83	OSF1.50	6490.00	6421.21				MinPt-O-SF	
	673.37	41.41	645.23	631.96	25.32	OSF1.50	7440.00	7356.91				MinPt-O-SF	
	10320.81	53.25	10284.78	10267.56	299.73	OSF1.50	18288.40	7890.00				TD	
Bear 3-65 22-23 36H GYRO+MWD 0' to 18165' - PR (Def Survey)													
												Pass	
	1033.61	32.81	1031.80	1000.80	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	1032.51	32.81	1030.58	999.70	8746.90	MAS = 10.00 (m)	28.00	28.00				MinPt-O-SF	
	1032.16	32.81	1030.25	999.35	10446.29	MAS = 10.00 (m)	70.00	70.00				MinPts	
	1032.49	32.81	1028.74	999.68	530.87	MAS = 10.00 (m)	470.00	470.00				MinPts	
	1031.01	32.81	1023.72	998.20	187.82	MAS = 10.00 (m)	1210.00	1210.00				MinPts	
	1028.57	32.81	1016.38	995.76	99.00	MAS = 10.00 (m)	2180.00	2180.00				MINPT-O-EOU	
	1028.42	32.81	1016.34	995.61	98.08	MAS = 10.00 (m)	2270.00	2270.00				MinPts	
	1028.42	32.81	1016.34	995.61	98.00	MAS = 10.00 (m)	2290.00	2290.00				MINPT-O-EOU	
	461.18	37.08	435.82	424.10	19.59	OSF1.50	6130.00	6067.68				MinPt-CtCt	
	461.25	37.23	435.79	424.02	19.51	OSF1.50	6150.00	6087.32				MINPT-O-EOU	
	461.32	37.30	435.81	424.01	19.47	OSF1.50	6160.00	6097.14				MinPt-O-ADP	
	473.45	39.10	446.84	434.35	18.90	OSF1.50	6430.00	6362.29				MinPt-O-SF	
	860.91	42.36	832.14	818.55	31.63	OSF1.50	7810.00	7674.94				MinPt-O-SF	
	904.58	44.12	874.63	860.46	31.86	OSF1.50	8040.00	7810.80				MinPt-O-SF	
	941.44	45.99	910.24	895.45	31.76	OSF1.50	8180.00	7862.25				MinPt-O-SF	
	956.65	46.72	924.97	909.93	31.75	OSF1.50	8230.00	7874.34				MinPt-O-SF	
	10319.07	58.14	10279.77	10260.93	273.73	OSF1.50	18288.40	7890.00				TD	
Bear 3-65 22-23 3AH GYRO+MWD 0' to 18081' - PR (Def Survey)													
												Pass	
	1088.64	32.81	1086.83	1055.83	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	1087.59	32.81	1085.67	1054.78	9706.00	MAS = 10.00 (m)	28.00	28.00				MinPt-O-SF	
	1077.18	32.81	1063.63	1044.37	91.67	MAS = 10.00 (m)	2180.00	2180.00				MINPT-O-EOU	
	1077.08	32.81	1063.62	1044.27	90.74	MAS = 10.00 (m)	2260.00	2260.00				MinPts	
	1077.08	32.81	1063.62	1044.28	90.66	MAS = 10.00 (m)	2280.00	2280.00				MINPT-O-EOU	
	591.24	34.83	567.38	556.41	26.86	OSF1.50	5760.00	5704.33				MinPt-CtCt	
	591.29	34.97	567.34	556.32	26.74	OSF1.50	5780.00	5723.97				MinPts	
	618.88	37.59	593.28	581.29	25.73	OSF1.50	6230.00	6165.89				MinPt-O-SF	
	1373.41	52.59	1337.82	1320.82	40.36	OSF1.50	8530.00	7890.00				MinPt-O-SF	
	10414.33	68.37	10368.22	10345.96	233.95	OSF1.50	18288.40	7890.00				TD	
King Ranch 1 Blind 0' to 8631' - DA (Def Survey)													
												Pass	
	3397.25	32.81	3395.44	3364.45	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	3396.83	32.81	3394.96	3364.02	67203.35	MAS = 10.00 (m)	28.00	28.00				MinPt-O-SF	
	3396.62	131.60	3308.35	3265.02	39.18	OSF1.50	2300.00	2300.00				MinPt-CtCt	
	3406.59	162.31	3297.85	3244.28	31.78	OSF1.50	2820.00	2817.15				MINPT-O-EOU	
	3498.30	269.66	3317.99	3228.64	19.57	OSF1.50	4650.00	4614.28				MinPt-O-ADP	
	3544.37	466.41	3232.90	3077.97	11.43	OSF1.50	8720.00	7890.00				MinPts	
	3544.94	466.55	3233.37	3078.39	11.43	OSF1.50	8780.00	7890.00				MinPt-O-SF	
	10206.93	481.93	9885.11	9725.00	31.87	OSF1.50	18288.40	7890.00				TD	
Quicksilver 18E-20-15 - Plan (Def Plan)													
												Pass	
	9279.99	456.59	8974.99	8823.40	30.60	OSF1.50	0.00	0.00				Surface	
	9255.56	457.38	8950.04	8798.18	30.47	OSF1.50	28.00	28.00				WRP	
	4688.53	774.73	4170.32	3913.80	9.13	OSF1.50	8520.00	7890.00				MinPts	
	4704.39	408.74	4430.25	4295.65	17.46	OSF1.50	18288.40	7890.00				MinPts	
Scranton Well Blind 0' to 801' - DRY (Def Survey)													
												Pass	
	6267.87	32.81	6266.05	6235.06	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	6267.39	32.81	6265.51	6234.58	93211.01	MAS = 10.00 (m)	28.00	28.00				MinPt-O-SF	
	6266.70	48.10	6234.03	6218.60	203.03	OSF1.50	920.00	920.00				MinPt-CtCt	
	6266.71	48.21	6233.96	6218.49	202.53	OSF1.50	930.00	930.00				MinPts	
	6294.25	48.65	6261.21	6245.59	201.50	OSF1.50	1510.00	1510.00				MinPt-O-SF	
	8486.94	140.96	8392.43	8345.98	91.33	OSF1.50	12680.00	7890.00				MinPt-CtCt	
	8488.45	145.46	8390.94	8342.99	88.49	OSF1.50	12840.00	7890.00				MINPT-O-EOU	
	8490.34	147.70	8391.34	8342.64	87.16	OSF1.50	12920.00	7890.00				MinPt-O-ADP	
	9860.53	247.01	9695.32	9613.52	60.26	OSF1.50	17700.00	7890.00				MinPt-O-SF	
	10172.70	253.94	10002.87	9918.76	60.46	OSF1.50	18288.40	7890.00				TD	