

FRU 197-28A9 R0 Geodetic Proposal

Report Date: October 9, 2009	Survey / DLS Computation Method: Minimum Curvature / Lubinski
Client: ExxonMobil	Vertical Section Azimuth: 57.590°
Field: CO, Rio Blanco County (NAD 27 NZ) ExxonMobil 2008	Vertical Section Origin: N 0.000 ft, E 0.000 ft
Structure / Slot: ExxonMobil 28-1S-97W (FRU 197-28A Pad) / FRU 197-28A9	TVD Reference Datum:
Well: FRU 197-28A9	TVD Reference Elevation: 6112.0 ft relative to MSL
Borehole: Original Hole	Sea Bed / Ground Level Elevation: 6081.600 ft relative to MSL
UWI/API#:	Magnetic Declination: 10.772°
Survey Name / Date: FRU 197-28A9 R0 ivs 9-Oct-09 / October 9, 2009	Total Field Strength: 52633.253 nT
Tort / AHD / DDI / ERD ratio: 48.000° / 1576.62 ft / 4.889 / 0.128	Magnetic Dip: 66.112°
Grid Coordinate System: NAD27 Colorado State Planes, Northern Zone, US Feet	Declination Date: October 09, 2009
Location Lat/Long: N 39 56 4.699, W 108 17 42.828	Magnetic Declination Model: BGM 2009
Location Grid N/E Y/X: N 231387.000 fTUS, E 1216265.000 fTUS	North Reference: Grid North
Grid Convergence Angle: -1.80609164°	Total Corr Mag North -> Grid North: +12.578°
Grid Scale Factor: 0.99997198	Local Coordinates Referenced To: Well Head

Comments	Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	Sub-Sea TVD (ft)	TVD (ft)	Vertical Section (ft)	NS (ft)	EW (ft)	DLS (deg/100ft)	Northing (fTUS)	Easting (fTUS)	Latitude	Longitude
Tie-in	0.00	0.00	57.59	-6112.00	0.00	0.00	0.00	0.00	0.00	231387.00	1216265.00	N 39 56 4.699	W 108 17 42.828
KOP, Build 2 deg/100ft	300.00	0.00	57.59	-5812.00	300.00	0.00	0.00	0.00	0.00	231387.00	1216265.00	N 39 56 4.699	W 108 17 42.828
	500.00	4.00	57.59	-5612.16	499.84	6.98	3.74	5.89	2.00	231390.74	1216270.89	N 39 56 4.738	W 108 17 42.754
A-groove	669.02	7.38	57.59	-5444.00	668.00	23.73	12.72	20.04	2.00	231399.72	1216285.04	N 39 56 4.831	W 108 17 42.576
B-groove	875.87	11.52	57.59	-5240.00	872.00	57.69	30.92	48.70	2.00	231417.92	1216313.70	N 39 56 5.020	W 108 17 42.216
	1000.00	14.00	57.59	-5118.94	993.06	85.10	45.61	71.84	2.00	231432.61	1216336.84	N 39 56 5.172	W 108 17 41.925
Hold 24 deg	1500.00	24.00	57.59	-4646.78	1465.22	247.68	132.75	209.10	2.00	231519.74	1216474.09	N 39 56 6.076	W 108 17 40.199
	2000.00	24.00	57.59	-4190.01	1921.99	451.04	241.75	380.79	0.00	231628.74	1216645.78	N 39 56 7.206	W 108 17 38.040
	2500.00	24.00	57.59	-3733.24	2378.76	654.41	350.75	552.48	0.00	231737.74	1216817.46	N 39 56 8.336	W 108 17 35.881
Wasatch A	2602.06	24.00	57.59	-3640.00	2472.00	695.93	373.00	587.53	0.00	231759.99	1216852.51	N 39 56 8.566	W 108 17 35.440
	3000.00	24.00	57.59	-3276.47	2835.53	857.78	459.75	724.17	0.00	231846.73	1216989.15	N 39 56 9.466	W 108 17 33.722
	3500.00	24.00	57.59	-2819.70	3292.30	1061.15	568.75	895.86	0.00	231955.73	1217160.83	N 39 56 10.596	W 108 17 31.563
Wasatch C	3851.05	24.00	57.59	-2499.00	3613.00	1203.93	645.27	1016.40	0.00	232032.26	1217281.37	N 39 56 11.389	W 108 17 30.048
10-3/4" Casing Point	3905.78	24.00	57.59	-2449.00	3663.00	1226.19	657.21	1035.20	0.00	232044.19	1217300.17	N 39 56 11.513	W 108 17 29.811
	4000.00	24.00	57.59	-2362.92	3749.08	1264.52	677.75	1067.55	0.00	232064.73	1217332.52	N 39 56 11.726	W 108 17 29.404
KOP, Drop 2 deg/100ft	4158.40	24.00	57.59	-2218.22	3893.78	1328.95	712.28	1121.94	0.00	232099.26	1217386.91	N 39 56 12.084	W 108 17 28.721
	4500.00	17.17	57.59	-1898.62	4213.38	1448.98	776.61	1223.28	2.00	232163.59	1217488.24	N 39 56 12.751	W 108 17 27.446
	5000.00	7.17	57.59	-1410.47	4701.53	1554.23	833.02	1312.14	2.00	232220.00	1217577.10	N 39 56 13.336	W 108 17 26.329
Vertical Point	5358.40	0.00	0.00	-1053.00	5059.00	1576.62	845.03	1331.04	2.00	232232.00	1217596.00	N 39 56 13.460	W 108 17 26.091
Wasatch G	5421.40	0.00	0.00	-990.00	5122.00	1576.62	845.03	1331.04	0.00	232232.00	1217596.00	N 39 56 13.460	W 108 17 26.091
	5500.00	0.00	0.00	-911.40	5200.60	1576.62	845.03	1331.04	0.00	232232.00	1217596.00	N 39 56 13.460	W 108 17 26.091
Wasatch I	5786.40	0.00	0.00	-625.00	5487.00	1576.62	845.03	1331.04	0.00	232232.00	1217596.00	N 39 56 13.460	W 108 17 26.091
	6000.00	0.00	0.00	-411.40	5700.60	1576.62	845.03	1331.04	0.00	232232.00	1217596.00	N 39 56 13.460	W 108 17 26.091
	6500.00	0.00	0.00	88.60	6200.60	1576.62	845.03	1331.04	0.00	232232.00	1217596.00	N 39 56 13.460	W 108 17 26.091
	7000.00	0.00	0.00	588.60	6700.60	1576.62	845.03	1331.04	0.00	232232.00	1217596.00	N 39 56 13.460	W 108 17 26.091
Ohio Creek	7261.40	0.00	0.00	850.00	6962.00	1576.62	845.03	1331.04	0.00	232232.00	1217596.00	N 39 56 13.460	W 108 17 26.091
	7500.00	0.00	0.00	1088.60	7200.60	1576.62	845.03	1331.04	0.00	232232.00	1217596.00	N 39 56 13.460	W 108 17 26.091
WF 850	7524.40	0.00	0.00	1113.00	7225.00	1576.62	845.03	1331.04	0.00	232232.00	1217596.00	N 39 56 13.460	W 108 17 26.091
WF 800	7755.40	0.00	0.00	1344.00	7456.00	1576.62	845.03	1331.04	0.00	232232.00	1217596.00	N 39 56 13.460	W 108 17 26.091
WF 700	7982.40	0.00	0.00	1571.00	7683.00	1576.62	845.03	1331.04	0.00	232232.00	1217596.00	N 39 56 13.460	W 108 17 26.091
	8000.00	0.00	0.00	1588.60	7700.60	1576.62	845.03	1331.04	0.00	232232.00	1217596.00	N 39 56 13.460	W 108 17 26.091
WF 600	8167.40	0.00	0.00	1756.00	7868.00	1576.62	845.03	1331.04	0.00	232232.00	1217596.00	N 39 56 13.460	W 108 17 26.091
WF 500	8403.40	0.00	0.00	1992.00	8104.00	1576.62	845.03	1331.04	0.00	232232.00	1217596.00	N 39 56 13.460	W 108 17 26.091
	8500.00	0.00	0.00	2088.60	8200.60	1576.62	845.03	1331.04	0.00	232232.00	1217596.00	N 39 56 13.460	W 108 17 26.091
7" Casing Point	8553.40	0.00	0.00	2142.00	8254.00	1576.62	845.03	1331.04	0.00	232232.00	1217596.00	N 39 56 13.460	W 108 17 26.091
	8923.40	0.00	0.00	2512.00	8624.00	1576.62	845.03	1331.04	0.00	232232.00	1217596.00	N 39 56 13.460	W 108 17 26.091
WF 400	9000.00	0.00	0.00	2588.60	8700.60	1576.62	845.03	1331.04	0.00	232232.00	1217596.00	N 39 56 13.460	W 108 17 26.091
	9500.00	0.00	0.00	3088.60	9200.60	1576.62	845.03	1331.04	0.00	232232.00	1217596.00	N 39 56 13.460	W 108 17 26.091
WF 300	9621.40	0.00	0.00	3210.00	9322.00	1576.62	845.03	1331.04	0.00	232232.00	1217596.00	N 39 56 13.460	W 108 17 26.091
	10000.00	0.00	0.00	3588.60	9700.60	1576.62	845.03	1331.04	0.00	232232.00	1217596.00	N 39 56 13.460	W 108 17 26.091
	10500.00	0.00	0.00	4088.60	10200.60	1576.62	845.03	1331.04	0.00	232232.00	1217596.00	N 39 56 13.460	W 108 17 26.091
WF 200	10749.40	0.00	0.00	4338.00	10450.00	1576.62	845.03	1331.04	0.00	232232.00	1217596.00	N 39 56 13.460	W 108 17 26.091
	11000.00	0.00	0.00	4588.60	10700.60	1576.62	845.03	1331.04	0.00	232232.00	1217596.00	N 39 56 13.460	W 108 17 26.091
Cameo	11005.40	0.00	0.00	4594.00	10706.00	1576.62	845.03	1331.04	0.00	232232.00	1217596.00	N 39 56 13.460	W 108 17 26.091
Rollins	11291.40	0.00	0.00	4880.00	10992.00	1576.62	845.03	1331.04	0.00	232232.00	1217596.00	N 39 56 13.460	W 108 17 26.091
	11479.40	0.00	0.00	5068.00	11180.00	1576.62	845.03	1331.04	0.00	232232.00	1217596.00	N 39 56 13.460	W 108 17 26.091
Cozzette Coastal	11500.00	0.00	0.00	5088.60	11200.60	1576.62	845.03	1331.04	0.00	232232.00	1217596.00	N 39 56 13.460	W 108 17 26.091
Corcoran Coastal	11782.40	0.00	0.00	5371.00	11483.00	1576.62	845.03	1331.04	0.00	232232.00	1217596.00	N 39 56 13.460	W 108 17 26.091
	12000.00	0.00	0.00	5588.60	11700.60	1576.62	845.03	1331.04	0.00	232232.00	1217596.00	N 39 56 13.460	W 108 17 26.091
Corcoran Marine	12380.40	0.00	0.00	5969.00	12081.00	1576.62	845.03	1331.04	0.00	232232.00	1217596.00	N 39 56 13.460	W 108 17 26.091
	12500.00	0.00	0.00	6088.60	12200.60	1576.62	845.03	1331.04	0.00	232232.00	1217596.00	N 39 56 13.460	W 108 17 26.091
TD	12580.40	0.00	0.00	6169.00	12281.00	1576.62	845.03	1331.04	0.00	232232.00	1217596.00	N 39 56 13.460	W 108 17 26.091

Survey Type: Non-Def Proposal

Survey Error Model: SLB ISCWSA version 24 *** 3-D 95.00% Confidence 2.7955 sigma

Surveying Prog:

MD From (ft)

MD To (ft)

EQU Freq

Survey Tool Type

Borehole -> Survey

0.00

30.40

1/100.00

SLB_NSG+SSHOT-Depth Only

Original Hole -> FRU 197-28A9 R0 ivs 9-Oct-09

30.40

300.00

1/100.00

SLB_NSG+SSHOT

Original Hole -> FRU 197-28A9 R0 ivs 9-Oct-09

300.00

5358.40

1/100.00

SLB_MWD-STD

Original Hole -> FRU 197-28A9 R0 ivs 9-Oct-09

5358.40

12580.40

1/100.00

SLB_INC-ONLY

Original Hole -> FRU 197-28A9 R0 ivs 9-Oct-09