

## Results of Directional Survey

API number:	30-025-40842		
OGRID:		Operator:	CIMAREX ENERGY CO.
		Property:	QUAIL 11 STATE # 2H

surface	ULSTR:	O	11	T 19S	R 34E
				330 FSL	2080 FEL

BH Loc	ULSTR:	B	11	T 19S	R 34E
15020	MD	10779.8	TVD	331 FNL	2028 FEL
				4949 FSL	

Top Perf/OH	ULSTR:	O	11	T 19S	R 34E
10700	MD	10638.5	TVD	677 FSL	1954 FEL

Bot Perf/OH	ULSTR:	B	11	T 19S	R 34E
14975	MD	10779.4	TVD	376 FNL	2026 FEL
				4904 FSL	

	MD	N/S	E/W	VD
	10698	345.86	125.62	10637.09
TOP PERFS/OH	10700	347.33	125.63	10638.45
	10729	368.65	125.84	10658.10
	14926	4524.59	55.74	10779.02
BOT PERFS/OH	14975	4573.55	53.82	10779.41
	15020	4618.51	52.05	10779.76

NEXT TO LAST	14926	4524.59	55.74	10779.02
LAST READING	15020	4618.51	52.05	10779.76
TD	15020	4618.51	52.05	10779.76

Surface Location	330	FS	2080	FE
Projected BHL	4949	FS	2028	FE
Location of				
Top Perfs/OH	677	FS	1954	FE
Bottom Perfs/OH	4904	FS	2026	FE

### SUMMARY of Subsurface Locations

Surface Location	O-11-19S-34E	330	FS	2080	FE	Vert. Depth
Top Perfs/OH	O-11-19S-34E	677	FS	1954	FE	10638.45
Bottom Perfs/OH	B-11-19S-34E	4904	FS	2026	FE	10779.41
Projected TD	B-11-19S-34E	4949	FS	2028	FE	10779.76

OCT 22 2013



## Cimarex Quail 11 State #2H Gyro+MWD Off to 15020ft MD

(Def Survey)

**Report Date:** May 24, 2013 - 10:51 AM  
**Client:** Cimarex  
**Field:** NM Lea County (NAD 83)  
**Structure / Slot:** Noram 23 / Cimarex Quail 11 State #2H  
**Well:** Cimarex Quail 11 State #2H  
**Borehole:** Original Borehole  
**UWI / API#:** Unknown / Unknown  
**Survey Name:** Cimarex Quail 11 State #2H Gyro+MWD Off to 15020ft MD  
**Survey Date:** May 03, 2013  
**Tort / AHD / DDI / ERD Ratio:** 129.923 ° / 4688.562 ft / 5.926 / 0.433  
**Coordinate Reference System:** NAD83 New Mexico State Plane, Eastern Zone, US Feet  
**Location Lat / Long:** N 32° 40' 6.58094", W 103° 31' 44.91918"  
**Location Grid N/E Y/X:** N 607866.900 fTUS, E 788804.300 fTUS  
**CRS Grid Convergence Angle:** 0.4341 °  
**Grid Scale Factor:** 0.99997922

**Survey / DLS Computation:** Minimum Curvature / Lubinski  
**Vertical Section Azimuth:** 0.740 ° (Grid North)  
**Vertical Section Origin:** 0.000 ft, 0.000 ft  
**TVD Reference Datum:** RKB  
**TVD Reference Elevation:** 3998.000 ft above MSL  
**Seabed / Ground Elevation:** 3970.000 ft above MSL  
**Magnetic Declination:** 7.474 °  
**Total Gravity Field Strength:** 998.4692mgn (9.80665 Based)  
**Total Magnetic Field Strength:** 48672.510 nT  
**Magnetic Dip Angle:** 60.522 °  
**Declination Date:** May 03, 2013  
**Magnetic Declination Model:** BGGM 2012  
**North Reference:** Grid North  
**Grid Convergence Used:** 0.4341 °  
**Total Corr Mag North->Grid North:** 7.0399 °  
**Local Coord Referenced To:** Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
SHL Quail 11 State #2H	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	69.81M
	100.00	0.38	69.81	100.00	0.12	0.11	0.31	0.33	69.81	0.38	89.31M
	200.00	0.45	89.31	200.00	0.25	0.23	1.02	1.04	77.04	0.16	117M
	300.00	0.48	117.00	299.99	0.07	0.05	1.78	1.78	88.45	0.22	116.55M
	402.90	0.71	116.55	402.89	-0.40	-0.43	2.74	2.77	98.98	0.22	116.87M
	497.60	1.07	116.87	497.58	-1.04	-1.09	4.05	4.19	105.12	0.38	122.2M
	592.30	0.98	122.20	592.26	-1.85	-1.93	5.52	5.85	109.22	0.14	120.76M
	687.00	0.89	120.76	686.95	-2.64	-2.73	6.84	7.37	111.78	0.10	114.19M
	781.70	0.55	114.19	781.64	-3.19	-3.30	7.89	8.55	112.68	0.37	111.73M
	876.40	0.48	111.73	876.34	-3.52	-3.63	8.67	9.40	112.71	0.08	109.39M
	971.10	0.48	109.39	971.03	-3.79	-3.91	9.41	10.19	112.54	0.02	86.88M
	1065.80	0.42	86.88	1065.73	-3.89	-4.02	10.13	10.90	111.64	0.20	106.51M
	1160.50	0.40	106.51	1160.43	-3.96	-4.10	10.80	11.55	110.77	0.15	95.3M
	1255.10	0.34	95.30	1255.03	-4.07	-4.21	11.39	12.15	110.30	0.10	111.98M
	1349.80	0.19	111.98	1349.73	-4.15	-4.30	11.82	12.58	109.99	0.18	70.09M
	1444.50	0.14	70.09	1444.43	-4.16	-4.32	12.07	12.82	109.68	0.13	15M
	1539.20	0.19	15.00	1539.12	-3.97	-4.13	12.22	12.90	108.66	0.17	58.59M
	1633.90	0.17	58.59	1633.82	-3.74	-3.90	12.38	12.98	107.49	0.14	108.15M
	1728.60	0.28	108.15	1728.52	-3.74	-3.90	12.72	13.31	107.05	0.23	160.05M
	1823.30	0.34	160.05	1823.22	-4.07	-4.24	13.04	13.71	108.01	0.29	152.58M
	1918.00	0.33	152.58	1917.92	-4.57	-4.74	13.26	14.08	109.69	0.05	144.27M
	2012.70	0.19	144.27	2012.62	-4.94	-5.11	13.48	14.41	110.78	0.15	102.52M
	2107.40	0.21	102.52	2107.32	-5.10	-5.28	13.74	14.72	111.02	0.15	75.15M
	2202.00	0.27	75.15	2201.92	-5.08	-5.26	14.12	15.07	110.43	0.13	70.47M
	2296.70	0.30	70.47	2296.62	-4.93	-5.12	14.57	15.45	109.36	0.04	56.61M
	2391.40	0.38	56.61	2391.32	-4.67	-4.86	15.07	15.83	107.89	0.12	59.31M
	2486.10	0.38	59.31	2486.01	-4.33	-4.53	15.60	16.24	106.19	0.02	53.4M
	2580.80	0.41	53.40	2580.71	-3.96	-4.17	16.14	16.67	104.48	0.05	60.56M
	2675.50	0.47	60.56	2675.41	-3.56	-3.78	16.75	17.17	102.70	0.09	76.29M
	2770.20	0.47	76.29	2770.11	-3.27	-3.49	17.47	17.81	101.31	0.14	71.22M
	2864.90	0.64	71.22	2864.80	-2.99	-3.23	18.35	18.63	99.99	0.19	67.77M
	2959.60	0.89	67.77	2959.49	-2.53	-2.78	19.53	19.72	98.11	0.27	59.61M
	3054.30	1.04	59.61	3054.18	-1.80	-2.07	20.95	21.05	95.64	0.21	52.38M
	3148.90	1.05	52.38	3148.76	-0.82	-1.11	22.38	22.40	92.83	0.14	43.01M
	3243.60	0.66	43.01	3243.45	0.13	-0.18	23.44	23.44	90.43	0.44	53.76M
	3338.30	0.65	53.76	3338.15	0.85	0.54	24.24	24.25	88.72	0.13	65.87M
	3433.00	0.76	65.87	3432.84	1.44	1.11	25.25	25.27	87.47	0.19	76.18M
	3527.70	0.80	76.18	3527.53	1.87	1.53	26.46	26.51	86.69	0.15	93.12M
	3622.40	0.72	93.12	3622.22	2.01	1.65	27.70	27.75	86.58	0.25	75.13M
	3717.10	0.82	75.13	3716.91	2.17	1.80	28.95	29.00	86.45	0.27	63.08M
	3811.80	0.91	63.08	3811.60	2.70	2.31	30.27	30.36	85.64	0.21	58.74M
	3906.50	0.93	58.74	3906.29	3.46	3.05	31.60	31.75	84.49	0.08	58.23M
	4001.20	0.87	58.23	4000.98	4.25	3.83	32.87	33.09	83.36	0.06	60.23M
	4095.80	0.80	60.23	4095.57	4.97	4.53	34.05	34.35	82.42	0.08	57.78M
	4190.50	0.72	57.78	4190.26	5.63	5.18	35.13	35.51	81.61	0.09	62.06M
	4285.20	0.76	62.06	4284.95	6.26	5.79	36.19	36.65	80.91	0.07	61.18M
	4379.90	0.83	61.18	4379.64	6.90	6.41	37.34	37.89	80.25	0.08	59.4M
	4474.60	0.90	59.40	4474.33	7.62	7.12	38.59	39.24	79.54	0.08	61.61M
	4569.30	0.97	61.61	4569.02	8.40	7.88	39.93	40.70	78.83	0.08	58.02M
	4664.00	0.96	58.02	4663.71	9.22	8.69	41.31	42.21	78.13	0.06	56.83M
	4758.70	1.03	56.83	4758.39	10.12	9.57	42.69	43.75	77.36	0.08	51.83M
	4853.40	1.22	51.83	4853.07	11.23	10.66	44.20	45.47	76.44	0.23	54.45M
	4948.10	1.32	54.45	4947.75	12.51	11.92	45.88	47.40	75.44	0.12	50.74M
	5042.70	1.36	50.74	5042.33	13.87	13.26	47.64	49.45	74.44	0.10	41.38M
	5137.40	1.52	41.38	5137.00	15.55	14.91	49.34	51.54	73.18	0.30	40.76M
	5232.10	1.49	40.76	5231.66	17.45	16.79	50.97	53.66	71.77	0.04	40.86M
	5326.80	1.48	40.86	5326.33	19.32	18.65	52.57	55.78	70.47	0.01	32.79M
	5421.50	1.48	32.79	5421.00	21.30	20.60	54.04	57.83	69.13	0.22	37.69M

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
	5516.20	1.55	37.69	5515.67	23.36	22.64	55.48	59.92	67.80	0.16	26.96M
	5610.90	1.50	26.96	5610.33	25.49	24.76	56.83	61.99	66.46	0.31	28.94M
	5705.60	1.56	28.94	5705.00	27.74	26.99	58.01	63.98	65.05	0.08	29.67M
	5800.30	1.63	29.67	5799.66	30.05	29.29	59.30	66.14	63.71	0.08	38.84M
	5895.00	1.67	38.84	5894.32	32.32	31.54	60.84	68.52	62.60	0.28	27.81M
	5989.60	1.67	27.81	5988.88	34.63	33.83	62.34	70.93	61.51	0.34	26.05M
	6084.30	1.74	26.05	6083.54	37.16	36.34	63.62	73.27	60.26	0.09	32.03M
	6179.00	1.73	32.03	6178.20	39.68	38.84	65.01	75.73	59.14	0.19	25.65M
	6273.70	1.70	25.65	6272.86	42.18	41.32	66.37	78.19	58.09	0.20	26.31M
	6368.40	1.81	26.31	6367.51	44.80	43.93	67.64	80.66	57.00	0.12	27.81M
	6463.10	1.79	27.81	6462.17	47.47	46.58	69.00	83.25	55.98	0.05	34.79M
	6557.80	1.76	34.79	6556.82	49.99	49.08	70.52	85.92	55.16	0.23	38.3M
	6652.50	1.76	38.30	6651.48	52.35	51.42	72.25	88.68	54.56	0.11	42.44M
	6747.20	1.68	42.44	6746.13	54.54	53.58	74.09	91.43	54.12	0.16	42.26M
	6841.90	1.75	42.26	6840.79	56.65	55.68	76.00	94.21	53.77	0.07	39.98M
	6936.50	1.62	39.98	6935.35	58.77	57.77	77.83	96.92	53.41	0.15	39.24M
	7031.20	1.64	39.24	7030.01	60.87	59.85	79.54	99.54	53.04	0.03	39.82M
	7125.90	1.63	39.82	7124.67	62.97	61.93	81.26	102.17	52.69	0.02	34.68M
	7220.60	1.51	34.68	7219.34	65.06	63.99	82.84	104.67	52.31	0.20	34.62M
	7315.30	1.32	34.62	7314.01	67.00	65.91	84.17	106.90	51.93	0.20	29.38M
	7410.00	1.12	29.38	7408.69	68.71	67.62	85.24	108.80	51.58	0.24	21.63M
	7504.70	1.13	21.63	7503.37	70.40	69.29	86.04	110.47	51.15	0.16	24.33M
	7599.40	1.12	24.33	7598.05	72.12	71.00	86.76	112.11	50.70	0.06	25.11M
	7694.10	1.12	25.11	7692.73	73.81	72.69	87.54	113.78	50.30	0.02	21.98M
	7788.80	1.06	21.98	7787.41	75.47	74.34	88.26	115.39	49.89	0.09	23.26M
	7883.40	1.08	23.26	7882.00	77.11	75.97	88.94	116.96	49.50	0.03	33.01M
	7978.10	0.92	33.01	7976.68	78.58	77.42	89.70	118.50	49.20	0.25	31.5M
	8072.80	0.80	31.50	8071.37	79.79	78.63	90.46	119.86	49.00	0.13	36.5M
	8167.50	0.79	36.50	8166.06	80.89	79.71	91.20	121.12	48.84	0.07	45.85M
	8262.20	0.87	45.85	8260.75	81.92	80.74	92.10	122.48	48.76	0.17	55.49M
	8356.90	0.93	55.49	8355.44	82.87	81.68	93.25	123.96	48.79	0.17	58.75M
	8451.60	1.10	58.75	8450.13	83.80	82.58	94.66	125.62	48.90	0.19	40.13M
	8546.30	1.22	40.13	8544.81	85.06	83.83	96.09	127.51	48.90	0.42	44.65M
	8641.00	1.82	44.65	8639.47	86.92	85.67	97.79	130.01	48.78	0.65	55.63M
	8735.70	2.17	55.63	8734.12	89.04	87.75	100.33	133.29	48.83	0.55	73.38M
	8830.30	2.65	73.38	8828.64	90.72	89.38	103.90	137.06	49.30	0.93	68.66M
	8925.00	2.38	68.66	8923.24	92.11	90.73	107.83	140.92	49.92	0.36	40.3M
	9019.70	1.95	40.30	9017.88	94.09	92.67	110.71	144.37	50.07	1.20	33.67M
	9114.40	1.94	33.67	9112.52	96.68	95.23	112.64	147.50	49.79	0.24	21.87M
	9209.10	1.97	21.87	9207.17	99.54	98.08	114.13	150.49	49.33	0.43	17.56M
	9303.80	2.06	17.56	9301.81	102.69	101.21	115.25	153.39	48.71	0.19	15.06M
	9398.50	2.27	15.06	9396.44	106.14	104.65	116.25	156.42	48.01	0.24	15.56M
	9493.20	2.53	15.56	9491.06	109.98	108.47	117.30	159.77	47.24	0.28	19.81M
	9587.90	2.66	19.81	9585.66	114.07	112.55	118.61	163.51	46.50	0.25	14.75M
	9682.60	2.80	14.75	9680.26	118.39	116.85	119.94	167.45	45.75	0.29	12.2M
	9777.20	3.02	12.20	9774.73	123.08	121.53	121.06	171.53	44.89	0.27	9.09M
	9871.90	3.11	9.09	9869.30	128.06	126.50	121.99	175.74	43.96	0.20	5.15M
	9966.60	2.80	5.15	9963.87	132.91	131.34	122.60	179.67	43.03	0.39	6.02M
	10061.30	2.71	6.02	10058.46	137.45	135.87	123.05	183.31	42.16	0.10	3.36M
	10156.00	2.58	3.36	10153.06	141.81	140.22	123.40	186.79	41.35	0.19	4.77M
Final Gyro Survey	10175.00	2.56	4.77	10172.04	142.66	141.07	123.47	187.47	41.19	0.35	6.94M
	10223.00	2.58	6.94	10219.99	144.80	143.21	123.68	189.23	40.81	0.21	3.05M
	10255.00	3.94	3.05	10251.94	146.62	145.03	123.83	190.70	40.49	4.30	359.67M
	10286.00	7.77	359.67	10282.77	149.78	148.19	123.88	193.14	39.89	12.40	357.06M
Survey 14-May-13	10318.00	12.86	357.06	10314.25	155.50	153.91	123.68	197.45	38.78	15.97	1.18L
	10350.00	17.34	356.75	10345.13	163.81	162.23	123.23	203.73	37.22	14.00	1.76L
	10381.00	20.68	356.46	10374.44	173.88	172.31	122.63	211.49	35.44	10.78	4.29R
	10413.00	23.80	357.04	10404.06	185.96	184.40	121.94	221.08	33.48	9.77	22.39R
	10444.00	26.73	359.70	10432.09	199.18	197.62	121.58	232.03	31.60	10.13	8.1R
Survey 15-May-13	10476.00	29.77	0.57	10460.27	214.32	212.77	121.63	245.08	29.75	9.59	8.83R
	10508.00	31.99	1.22	10487.74	230.74	229.19	121.89	259.58	28.00	7.02	32.43R
	10540.00	33.45	2.89	10514.66	248.03	246.47	122.51	275.24	26.43	5.36	4.89R
	10571.00	35.70	3.22	10540.18	265.61	264.04	123.45	291.47	25.06	7.28	14.89L
	10603.00	38.12	2.18	10565.77	284.81	283.23	124.35	309.33	23.70	7.81	9.08L
	10635.00	39.72	1.78	10590.66	304.91	303.32	125.04	328.09	22.40	5.06	18.15L
Survey 16-May-13	10666.00	42.25	0.55	10614.06	325.24	323.65	125.45	347.11	21.19	8.57	2.85L
	10698.00	45.70	0.31	10637.09	347.46	345.86	125.62	367.97	19.96	10.79	6.53R
	10729.00	48.93	0.80	10658.10	370.24	368.65	125.84	389.53	18.85	10.48	10.37L
	10761.00	51.32	0.24	10678.62	394.80	393.20	126.06	412.92	17.78	7.59	11.84L
	10792.00	54.63	359.39	10697.28	419.54	417.95	125.98	436.52	16.77	10.90	9.31L
	10824.00	58.92	358.57	10714.81	446.29	444.71	125.50	462.07	15.76	13.58	4.46L
	10855.00	62.33	358.27	10730.01	473.28	471.71	124.75	487.92	14.81	11.03	0.57L
	10887.00	65.07	358.24	10744.19	501.94	500.38	123.88	515.48	13.90	8.56	0.72R
	10918.00	68.04	358.28	10756.52	530.35	528.80	123.01	542.92	13.10	9.58	3.07R
	10950.00	70.68	358.43	10767.80	560.26	558.73	122.15	571.93	12.33	8.26	10.35R
	10982.00	72.72	358.82	10777.85	590.62	589.10	121.42	601.49	11.65	6.48	10.71L
	11013.00	75.33	358.31	10786.38	620.40	618.89	120.68	630.55	11.03	8.57	2.43L
	11045.00	77.17	358.23	10793.99	651.45	649.96	119.74	660.90	10.44	5.76	56.9L
	11076.00	77.31	358.01	10800.83	681.66	680.18	118.75	690.47	9.90	0.83	147.78R
	11108.00	76.97	358.23	10807.96	712.82	711.36	117.72	721.04	9.40	1.26	13.1R
	11139.00	76.86	358.36	10814.97	742.99	741.54	116.83	750.69	8.95	0.54	3.01R
	11171.00	79.10	358.48	10821.64	774.26	772.83	115.96	781.48	8.53	7.01	0.25L

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
Survey 18-May-13	11202.00	81.37	358.47	10826.89	804.79	803.37	115.15	811.58	8.16	7.32	12.61L
	11234.00	83.28	358.04	10831.17	836.47	835.06	114.18	842.83	7.79	6.12	45.54L
	11259.00	84.63	356.66	10833.80	861.28	859.90	113.03	867.29	7.49	7.70	18.99L
	11291.00	86.06	356.16	10836.39	893.09	891.73	111.04	898.61	7.10	4.79	2.93R
	11323.00	87.25	356.22	10838.25	924.93	923.60	108.91	930.00	6.73	3.66	15.08L
	11354.00	88.66	355.84	10839.36	955.81	954.51	106.77	960.46	6.38	4.71	9.16R
	11386.00	89.90	356.04	10839.76	987.69	986.42	104.50	991.94	6.05	3.93	18.7L
	11417.00	91.20	355.60	10839.46	1018.57	1017.34	102.24	1022.46	5.74	4.43	73.72R
	11512.00	91.48	356.56	10837.24	1113.23	1112.09	95.75	1116.20	4.92	1.05	90R
	11607.00	91.48	356.96	10834.79	1207.97	1206.91	90.38	1210.28	4.28	0.42	103.67R
	11701.00	91.20	358.11	10832.59	1301.80	1300.79	86.34	1303.65	3.80	1.26	44.99R
	11796.00	91.51	358.42	10830.34	1396.68	1395.72	83.47	1398.21	3.42	0.46	102.44R
11890.00	91.34	359.19	10828.01	1490.60	1489.67	81.51	1491.90	3.13	0.84	43.95R	
11984.00	91.62	359.46	10825.58	1584.54	1583.63	80.40	1585.67	2.91	0.41	120.25R	
12079.00	91.20	0.18	10823.24	1679.50	1678.60	80.10	1680.51	2.73	0.88	33.13L	
Survey 20-May-13	12174.00	91.69	359.86	10820.85	1774.46	1773.57	80.13	1775.38	2.59	0.62	52.58R
	12269.00	91.82	0.03	10817.94	1869.40	1868.53	80.04	1870.24	2.45	0.23	127.43L
	12364.00	91.20	359.22	10815.43	1964.35	1963.49	79.42	1965.10	2.32	1.07	90L
	12459.00	91.20	358.86	10813.44	2059.29	2058.46	77.83	2059.93	2.17	0.38	153.44L
	12553.00	91.10	358.81	10811.56	2153.22	2152.42	75.92	2153.76	2.02	0.12	72.34R
	12648.00	91.17	359.03	10809.68	2248.15	2247.38	74.13	2248.60	1.89	0.24	90R
	12743.00	91.17	359.22	10807.74	2343.09	2342.35	72.68	2343.48	1.78	0.20	41.41R
	12838.00	91.51	359.52	10805.51	2438.04	2437.32	71.64	2438.37	1.68	0.48	149.35L
	12933.00	91.24	359.36	10803.23	2532.99	2532.29	70.71	2533.27	1.60	0.33	41.98R
	13028.00	91.44	359.54	10801.01	2627.94	2627.26	69.80	2628.18	1.52	0.28	57.52R
	13123.00	91.51	359.65	10798.57	2722.89	2722.22	69.12	2723.10	1.45	0.14	96.05R
	13218.00	91.44	0.31	10796.12	2817.85	2817.19	69.09	2818.04	1.40	0.70	90R
13313.00	91.44	0.62	10793.73	2912.82	2912.16	69.86	2913.00	1.37	0.33	173.29R	
13408.00	91.27	0.64	10791.49	3007.79	3007.13	70.91	3007.96	1.35	0.18	14.03R	
13503.00	91.31	0.65	10789.35	3102.77	3102.10	71.97	3102.93	1.33	0.04	174.81L	
13598.00	91.20	0.64	10787.27	3197.74	3197.07	73.04	3197.90	1.31	0.12	4.76R	
13692.00	91.44	0.66	10785.10	3291.72	3291.04	74.11	3291.87	1.29	0.26	90R	
13787.00	91.44	0.87	10782.72	3386.69	3386.00	75.38	3386.84	1.28	0.22	172.88L	
13882.00	90.72	0.78	10780.93	3481.67	3480.97	76.75	3481.82	1.26	0.76	109.56L	
13977.00	90.45	0.02	10779.96	3576.66	3575.96	77.41	3576.80	1.24	0.85	33.99L	
14072.00	91.31	359.44	10778.50	3671.64	3670.95	76.96	3671.75	1.20	1.09	173.23L	
14167.00	90.72	359.37	10776.81	3766.59	3765.93	75.97	3766.69	1.16	0.63	165.96L	
14262.00	90.28	359.26	10775.98	3861.56	3860.92	74.84	3861.64	1.11	0.48	20.43R	
14357.00	90.79	359.45	10775.10	3956.53	3955.91	73.77	3956.59	1.07	0.57	132.83L	
14452.00	89.52	358.08	10774.84	4051.47	4050.88	71.72	4051.51	1.01	1.97	172.41R	
14547.00	89.07	358.14	10776.01	4146.36	4145.82	68.59	4146.39	0.95	0.48	23.86R	
14642.00	89.59	358.37	10777.12	4241.26	4240.77	65.70	4241.28	0.89	0.60	68.2L	
14737.00	89.73	358.02	10777.68	4336.17	4335.72	62.70	4336.17	0.83	0.40	144.16L	
14832.00	89.55	357.89	10778.28	4431.05	4430.66	59.31	4431.06	0.77	0.23	90L	
Final Survey	14926.00	89.55	357.75	10779.02	4524.93	4524.59	55.74	4524.93	0.71	0.15	HS
Proj to TD	15020.00	89.55	357.75	10779.76	4618.80	4618.51	52.05	4618.81	0.65	0.00	

Survey Type: Def Survey

Survey Error Model: ISCWSA Rev 0 \*\*\* 3-D 95.000% Confidence 2.7955 sigma

Survey Program:

Description	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	0.000	28.000		Act Stns	30.000	30.000	SLB_NSG+MSHOT-Depth Only
	28.000	10175.000		Act Stns	30.000	30.000	Original Borehole / Cimarex Quail 11 State #2H Gyro+MWD 0ft to 15020ft MD
	10175.000	14926.000		Act Stns	30.000	30.000	SLB_MWD-STD
	14926.000	15020.000		Act Stns	30.000	30.000	SLB_BLIND+TREND
							Original Borehole / Cimarex Quail 11 State #2H Gyro+MWD 0ft to

