

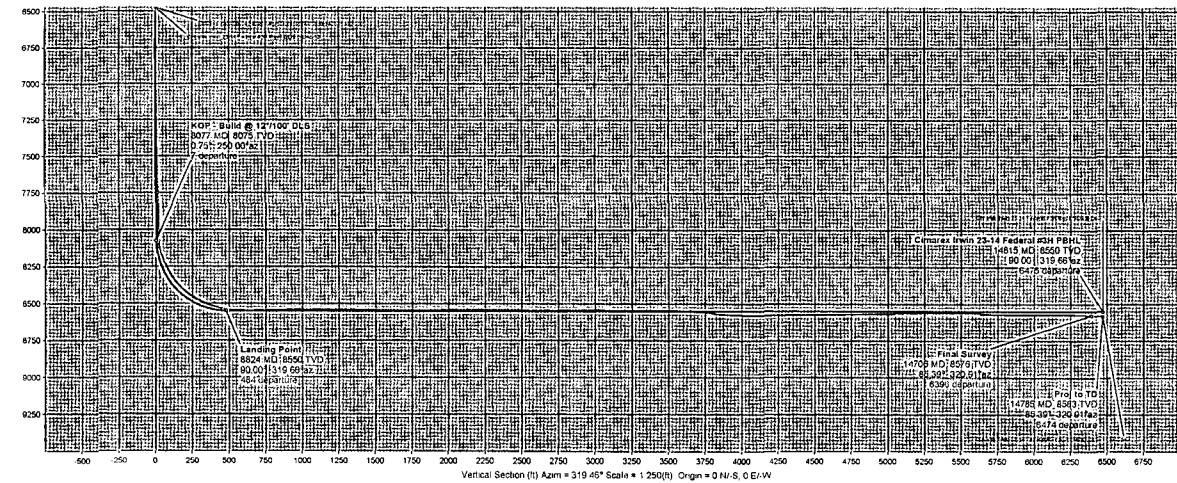
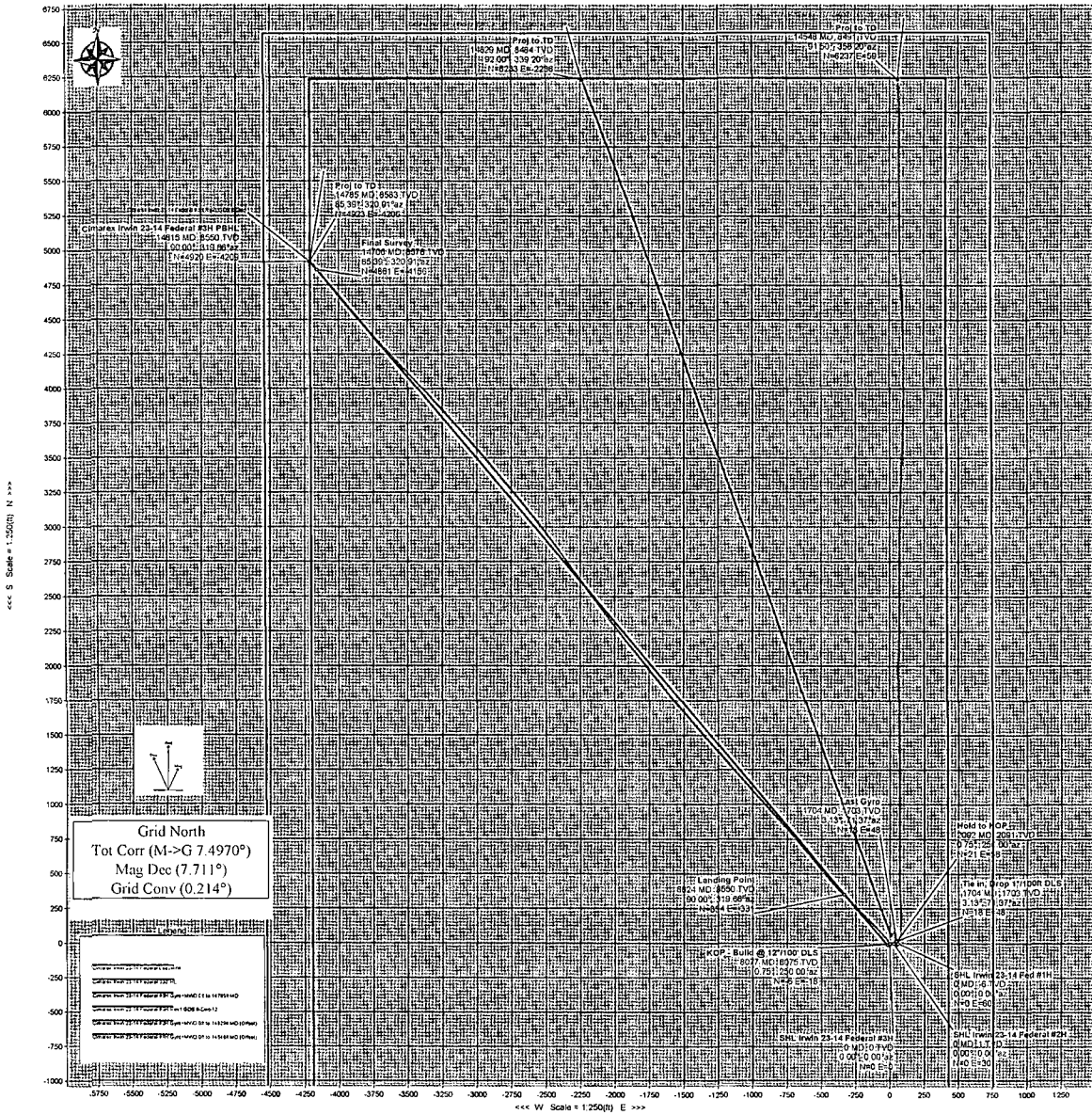


Cimarex

30-015-39893



WELL Irwin 23-14 Federal #3H	FIELD NM Eddy County	STRUCTURE Cactus 101
Magnetic Parameters Model: B5024 2012 Dip: 48.811° Mag Dec: 7.711°	Date December 07, 2012 18:48:10T	Surface Location Lat: N 33 38 38.254 Lon: W 103 56 53.965
NAD83 New Mexico State Plane, Eastern Zone, US Feet NAD83 89 8118 663462 38 2615 Scale Factor: 0.9992617	Measurements Run: Irwin 23-14 Federal #3H Run Date: 02/18/2012	ITD Ref: 843613794 (above) Survey Date: December 07, 2012



Drawn By: R. Schneider  
Date Created: December 11, 2012 06:17:51 AM  
Checked By:  
Checked Date:  
Approved By:



## Cimarex Irwin 23-14 Federal #3H Gyro+MWD 0ft to 14785ft MD

(Def Survey)

**Report Date:** January 04, 2013 - 09:05 AM  
**Client:** Cimarex  
**Field:** NM Eddy County (NAD 83)  
**Structure / Slot:** Cactus 101 / Cimarex Irwin 23-14 Federal #3H  
**Well:** Cimarex Irwin 23-14 Federal #3H  
**Borehole:** Original Borehole  
**UWI / API#:** Unknown / Unknown  
**Survey Name:** Cimarex Irwin 23-14 Federal #3H Gyro+MWD 0ft to 14785ft MD  
**Survey Date:** December 07, 2012  
**Tort / AHD / DDI / ERD Ratio:** 184.781 ° / 6659.505 ft / 6.326 / 0.776  
**Coordinate Reference System:** NAD83 New Mexico State Plane, Eastern Zone, US Feet  
**Location Lat / Long:** N 32° 38' 58.25555", W 103° 56' 11.56535"  
**Location Grid N/E Y/X:** N 600252.800 ftUS, E 663462.300 ftUS  
**CRS Grid Convergence Angle:** 0.2141 °  
**Grid Scale Factor:** 0.99992617

**Survey / DLS Computation:** Minimum Curvature / Lubinski  
**Vertical Section Azimuth:** 319.458 ° (Grid North)  
**Vertical Section Origin:** 0.000 ft, 0.000 ft  
**TVD Reference Datum:** RKB  
**TVD Reference Elevation:** 3299.000 ft above  
**Seabed / Ground Elevation:** 3281.000 ft above  
**Magnetic Declination:** 7.711 °  
**Total Gravity Field Strength:** 999.2116 mgn (9.8 based)  
**Total Magnetic Field Strength:** 48668.406 nT  
**Magnetic Dip Angle:** 60.445 °  
**Declination Date:** December 07, 2012  
**Magnetic Declination Model:** BGGM 2012  
**North Reference:** Grid North  
**Grid Convergence Used:** 0.2141 °  
**Total Corr Mag North->Grid North:** 7.4970 °  
**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 Irwin 23-14 Federal #3H	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	15.62M
	100.00	0.43	15.62	100.00	0.21	0.36	0.10	0.38	15.62	0.43	11.41M
	200.00	0.44	11.41	200.00	0.65	1.10	0.28	1.13	14.20	0.03	47.11M
	300.00	0.71	47.11	299.99	0.92	1.90	0.81	2.06	23.07	0.44	73.1M
	400.00	0.72	73.10	399.98	0.69	2.50	1.86	3.12	36.68	0.32	75.17M
	500.00	1.08	75.17	499.97	0.03	2.93	3.38	4.47	49.08	0.36	70.38M
	600.00	1.20	70.38	599.95	-0.75	3.52	5.27	6.34	56.29	0.15	71.6M
	700.00	1.62	71.60	699.92	-1.66	4.32	7.60	8.74	60.41	0.42	73.65M
	795.70	1.58	73.65	795.58	-2.71	5.11	10.15	11.37	63.26	0.07	74M
	891.00	1.83	74.00	890.84	-3.88	5.90	12.87	14.16	65.36	0.26	74.06M
	986.30	2.12	74.06	986.08	-5.25	6.81	16.03	17.42	66.99	0.30	72.45M
	1081.60	2.38	72.45	1081.31	-6.75	7.89	19.61	21.14	68.09	0.28	71.32M
	1176.90	2.55	71.32	1176.52	-8.32	9.16	23.51	25.23	68.70	0.19	71.97M
	1272.20	2.66	71.97	1271.72	-9.95	10.53	27.62	29.56	69.14	0.12	70.54M
	1367.50	2.77	70.54	1366.92	-11.63	11.98	31.89	34.07	69.41	0.14	68.84M
	1462.70	2.92	68.84	1462.00	-13.26	13.62	36.32	38.79	69.44	0.18	68.81M
	1558.00	3.03	68.81	1557.17	-14.90	15.41	40.93	43.74	69.37	0.12	70.98M
	1653.30	3.07	70.98	1652.34	-16.67	17.15	45.70	48.81	69.43	0.13	71.37M
Last Gyro	1704.30	3.13	71.37	1703.26	-17.69	18.04	48.31	51.56	69.52	0.12	72.31M

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
	1835.00	2.90	72.31	1833.78	-20.31	20.18	54.84	58.43	69.79	0.18	77.28M
	1866.00	2.90	77.28	1864.74	-20.98	20.59	56.35	60.00	69.92	0.81	72.18M
	1961.00	2.29	72.18	1959.64	-22.83	21.70	60.50	64.28	70.26	0.69	81.58M
	2056.00	1.10	81.58	2054.60	-24.05	22.42	63.21	67.07	70.47	1.28	93.97M
	2152.00	0.48	93.97	2150.59	-24.82	22.53	64.52	68.34	70.76	0.67	230.69M
	2247.00	0.40	230.69	2245.59	-25.09	22.29	64.66	68.40	70.98	0.86	256.7M
	2343.00	1.10	256.70	2341.58	-24.66	21.86	63.51	67.17	71.00	0.79	244.88M
	2438.00	1.10	244.88	2436.56	-24.00	21.27	61.79	65.35	71.01	0.24	245.5M
	2535.00	1.01	245.50	2533.55	-23.52	20.52	60.17	63.57	71.17	0.09	242.99M
	2630.00	1.32	242.99	2628.53	-23.03	19.67	58.44	61.66	71.39	0.33	245.67M
	2725.00	1.19	245.67	2723.50	-22.50	18.77	56.56	59.60	71.64	0.15	236.27M
	2821.00	1.10	236.27	2819.49	-22.11	17.85	54.89	57.72	71.99	0.22	241.89M
	2916.00	1.32	241.89	2914.46	-21.77	16.83	53.16	55.76	72.44	0.26	233.28M
	3011.00	1.19	233.28	3009.44	-21.47	15.72	51.41	53.76	73.00	0.24	236.09M
	3107.00	1.01	236.09	3105.42	-21.31	14.65	49.91	52.01	73.64	0.20	239.61M
	3202.00	1.41	239.61	3200.40	-21.00	13.59	48.20	50.08	74.25	0.43	249.8M
	3297.00	1.49	249.80	3295.37	-20.37	12.58	46.04	47.72	74.72	0.28	248.97M
	3392.00	1.19	248.97	3390.35	-19.61	11.80	43.96	45.51	74.98	0.32	256.31M
	3488.00	1.49	256.31	3486.32	-18.71	11.14	41.81	43.27	75.08	0.36	42.3M
	3584.00	1.32	42.30	3582.31	-18.01	11.66	41.35	42.96	74.24	2.80	248.89M
	3679.00	1.32	248.89	3677.30	-17.51	12.08	41.06	42.80	73.61	2.70	245.51M
	3775.00	1.41	245.51	3773.27	-16.82	11.19	38.95	40.53	73.97	0.13	239.4M
	3870.00	1.49	239.40	3868.24	-16.28	10.08	36.83	38.18	74.69	0.18	242.21M
	3965.00	1.41	242.21	3963.21	-15.81	8.91	34.73	35.85	75.62	0.11	245.11M
	4061.00	1.19	245.11	4059.19	-15.28	7.94	32.78	33.73	76.39	0.24	230.79M
	4156.00	1.10	230.79	4154.17	-14.99	6.94	31.18	31.94	77.45	0.31	230.79M
	4252.00	1.32	230.79	4250.15	-14.94	5.66	29.61	30.15	79.17	0.23	243.09M
	4347.00	1.01	243.09	4345.13	-14.72	4.59	28.01	28.39	80.69	0.42	247.22M
	4442.00	0.88	247.22	4440.11	-14.30	3.93	26.60	26.88	81.59	0.15	257.11M
	4538.00	0.88	257.11	4536.10	-13.73	3.48	25.20	25.44	82.14	0.16	257.2M
	4633.00	0.88	257.20	4631.09	-13.06	3.16	23.77	23.98	82.44	0.00	259.22M
	4728.00	0.88	259.22	4726.08	-12.35	2.86	22.35	22.53	82.71	0.03	251.31M
	4824.00	0.88	251.31	4822.07	-11.71	2.48	20.92	21.07	83.23	0.13	231.71M
	4919.00	1.01	231.71	4917.06	-11.41	1.73	19.58	19.65	84.95	0.36	220.59M
	5015.00	1.49	220.59	5013.03	-11.57	0.26	18.10	18.10	89.18	0.56	224.02M
	5110.00	2.11	224.02	5107.99	-11.92	-1.94	16.08	16.20	96.87	0.66	222.3M
	5206.00	2.29	222.30	5203.92	-12.33	-4.63	13.56	14.33	108.84	0.20	224.81M
	5300.00	2.42	224.81	5297.84	-12.73	-7.42	10.90	13.19	124.26	0.18	224.99M
	5396.00	2.42	224.99	5393.75	-13.05	-10.29	8.04	13.06	142.02	0.01	227.01M
	5491.00	2.42	227.01	5488.67	-13.29	-13.08	5.15	14.06	158.50	0.09	227.4M
	5586.00	2.50	227.40	5583.58	-13.45	-15.85	2.16	16.00	172.24	0.09	232.81M
	5682.00	2.50	232.81	5679.49	-13.40	-18.53	-1.05	18.56	183.24	0.25	263M
	5776.00	1.80	263.00	5773.42	-12.47	-19.95	-4.15	20.38	191.74	1.39	285.5M
	5871.00	1.32	285.50	5868.39	-10.73	-19.84	-6.68	20.94	198.61	0.81	287.52M

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
	5967.00	1.32	287.52	5964.36	-8.88	-19.21	-8.80	21.13	204.61	0.05	293.32M
	6062.00	1.10	293.32	6059.34	-7.13	-18.52	-10.68	21.38	209.97	0.26	294.2M
	6158.00	0.88	294.20	6155.33	-5.64	-17.86	-12.20	21.63	214.35	0.23	306.2M
	6252.00	0.88	306.20	6249.32	-4.28	-17.13	-13.44	21.78	218.12	0.20	307.29M
	6348.00	0.79	307.29	6345.31	-2.92	-16.30	-14.56	21.86	221.79	0.10	304.31M
	6442.00	0.70	304.31	6439.30	-1.73	-15.58	-15.55	22.02	224.95	0.10	309.49M
	6538.00	0.70	309.49	6535.29	-0.59	-14.88	-16.49	22.21	227.94	0.07	298.51M
	6633.00	0.70	298.51	6630.28	0.53	-14.23	-17.45	22.52	230.80	0.14	45.29M
	6728.00	0.40	45.29	6725.28	1.09	-13.72	-17.72	22.41	232.25	0.95	32.9M
	6823.00	0.70	32.90	6820.28	1.28	-13.00	-17.17	21.54	232.87	0.34	29.52M
	6918.00	1.19	29.52	6915.26	1.78	-11.66	-16.37	20.10	234.55	0.52	18.71M
	7013.00	1.32	18.71	7010.24	2.68	-9.76	-15.53	18.35	237.86	0.28	14.31M
	7109.00	1.41	14.31	7106.21	3.93	-7.57	-14.89	16.70	243.05	0.14	16.29M
	7204.00	1.80	16.29	7201.18	5.41	-5.00	-14.18	15.04	250.56	0.41	14.49M
	7299.00	2.02	14.49	7296.12	7.19	-1.95	-13.34	13.48	261.68	0.24	19.69M
	7394.00	2.02	19.69	7391.06	8.98	1.25	-12.36	12.42	275.76	0.19	15.19M
	7489.00	1.49	15.19	7486.02	10.51	4.01	-11.47	12.15	289.29	0.58	2.18M
	7584.00	1.32	2.18	7580.99	12.01	6.30	-11.11	12.77	299.57	0.38	346.19M
	7679.00	1.19	346.19	7675.97	13.69	8.35	-11.30	14.05	306.47	0.39	346.8M
	7775.00	1.01	346.80	7771.95	15.33	10.14	-11.73	15.51	310.85	0.19	333.79M
	7870.00	0.88	333.79	7866.94	16.78	11.61	-12.24	16.88	313.48	0.26	327.82M
	7965.00	1.01	327.82	7961.93	18.32	12.98	-13.01	18.38	314.92	0.17	324.07M
	8019.00	1.13	324.07	8015.92	19.32	13.81	-13.58	19.37	315.48	0.26	318.5M
	8051.00	0.89	318.50	8047.91	19.88	14.25	-13.93	19.93	315.66	0.81	336.98M
	8083.00	2.84	336.98	8079.89	20.89	15.17	-14.40	20.92	316.48	6.30	336.19M
	8114.00	7.77	336.19	8110.75	23.63	17.79	-15.55	23.63	318.85	15.90	331.73M
	8146.00	13.29	331.73	8142.20	29.30	23.02	-18.17	29.32	321.71	17.42	31.39L
	8178.00	19.19	321.30	8172.92	38.16	30.37	-23.20	38.22	322.62	20.50	27.75L
	8209.00	22.53	316.80	8201.88	49.19	38.68	-30.46	49.23	321.78	11.94	4.84R
	8241.00	25.65	317.41	8231.09	62.24	48.25	-39.34	62.25	320.80	9.78	6.93R
	8273.00	28.83	318.21	8259.54	76.88	59.10	-49.17	76.88	320.24	10.00	4.38L
	8305.00	30.91	317.90	8287.29	92.81	70.95	-59.83	92.81	319.86	6.52	13.41L
	8337.00	33.61	316.74	8314.34	109.87	83.50	-71.41	109.87	319.46	8.66	2.22L
	8368.00	37.03	316.52	8339.63	127.77	96.53	-83.72	127.77	319.07	11.04	5.56L
	8400.00	41.46	315.87	8364.41	147.98	111.13	-97.73	147.99	318.67	13.90	6.79L
	8432.00	44.90	315.29	8387.74	169.82	126.77	-113.06	169.86	318.27	10.82	1.33R
	8464.00	48.45	315.40	8409.69	193.04	143.32	-129.41	193.11	317.92	11.10	1.89R
	8495.00	51.78	315.54	8429.57	216.76	160.28	-146.09	216.87	317.65	10.75	3.5L
	8527.00	56.13	315.22	8448.40	242.56	178.69	-164.26	242.72	317.41	13.62	8.26L
	8559.00	59.89	314.59	8465.35	269.61	197.84	-183.49	269.83	317.16	11.87	5.61R
	8591.00	62.51	314.88	8480.76	297.56	217.58	-203.40	297.85	316.93	8.23	3.82L
	8623.00	65.65	314.65	8494.75	326.24	237.84	-223.84	326.61	316.74	9.83	5.52R
	8654.00	69.33	315.03	8506.61	354.78	258.04	-244.14	355.23	316.59	11.92	13.96R
	8686.00	72.44	315.84	8517.09	384.94	279.58	-265.35	385.45	316.50	10.01	5.81L

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
	8717.00	74.91	315.58	8525.80	414.62	300.87	-286.12	415.20	316.44	8.01	12.28L
	8749.00	78.06	314.88	8533.28	445.65	322.95	-308.03	446.30	316.35	10.07	8.71R
	8780.00	81.42	315.40	8538.80	476.06	344.57	-329.55	476.79	316.28	10.96	5.21L
	8812.00	84.48	315.12	8542.73	507.73	367.13	-351.90	508.54	316.21	9.60	3.99R
	8844.00	86.34	315.25	8545.29	539.54	389.76	-374.38	540.43	316.15	5.83	34.86R
	8876.00	87.10	315.78	8547.12	571.41	412.55	-396.77	572.38	316.12	2.89	45.39R
	8908.00	88.61	317.31	8548.32	603.34	435.76	-418.76	604.36	316.14	6.72	46.22R
	8935.00	90.00	318.76	8548.65	630.33	455.83	-436.81	631.34	316.22	7.44	60.94R
	8966.00	90.75	320.11	8548.44	661.33	479.38	-456.97	662.29	316.37	4.98	44.23R
	8999.00	91.13	320.48	8547.90	694.32	504.77	-478.05	695.21	316.56	1.61	13.32L
	9030.00	91.51	320.39	8547.19	725.31	528.66	-497.79	726.14	316.72	1.26	21.53R
	9062.00	91.89	320.54	8546.24	757.29	553.33	-518.15	758.06	316.88	1.28	16.18L
	9094.00	92.20	320.45	8545.10	789.26	578.00	-538.49	789.97	317.03	1.01	137.77L
	9189.00	91.44	319.76	8542.08	884.21	650.85	-599.39	884.80	317.36	1.08	127.47L
	9285.00	90.75	318.86	8540.24	980.19	723.63	-661.97	980.73	317.55	1.18	169.16L
	9380.00	90.28	318.77	8539.39	1075.18	795.12	-724.52	1075.71	317.66	0.50	127.79L
	9476.00	89.90	318.28	8539.24	1171.16	867.05	-788.10	1171.70	317.73	0.65	131.19R
	9571.00	89.76	318.44	8539.52	1266.15	938.04	-851.22	1266.69	317.78	0.22	155.13L
	9666.00	88.66	317.93	8540.83	1361.11	1008.84	-914.56	1361.68	317.81	1.28	33.69L
	9761.00	89.35	317.47	8542.48	1456.05	1079.09	-978.48	1456.66	317.80	0.87	81.26R
	9856.00	89.45	318.12	8543.48	1551.01	1149.46	-1042.30	1551.66	317.80	0.69	169.16R
	9952.00	88.98	318.21	8544.79	1646.97	1220.98	-1106.32	1647.65	317.82	0.50	3.47R
	10047.00	89.97	318.27	8545.66	1741.95	1291.84	-1169.59	1742.64	317.84	1.04	23.83R
	10143.00	91.69	319.03	8544.27	1837.92	1363.89	-1233.00	1838.62	317.89	1.96	176.36L
	10238.00	90.59	318.96	8542.38	1932.90	1435.57	-1295.32	1933.58	317.94	1.16	42.43L
	10333.00	90.94	318.64	8541.11	2027.88	1507.04	-1357.89	2028.56	317.98	0.50	173.83R
	10428.00	89.46	318.80	8540.78	2122.87	1578.43	-1420.57	2123.55	318.01	1.57	37.97R
	10523.00	89.87	319.12	8541.34	2217.87	1650.09	-1482.94	2218.53	318.05	0.55	40.53R
	10618.00	90.56	319.71	8540.98	2312.87	1722.23	-1544.74	2313.51	318.11	0.96	122.55R
	10714.00	89.73	321.01	8540.74	2408.85	1796.16	-1605.99	2409.43	318.20	1.61	144.19R
	10807.00	88.94	321.58	8541.82	2501.80	1868.72	-1664.13	2502.29	318.31	1.05	26.56L
	10903.00	89.04	321.53	8543.51	2597.72	1943.90	-1723.81	2598.13	318.43	0.12	13.59L
	10998.00	90.24	321.24	8544.10	2692.66	2018.13	-1783.10	2693.01	318.54	1.30	48.42L
	11093.00	90.79	320.62	8543.25	2787.62	2091.88	-1842.97	2787.92	318.62	0.87	78.99R
	11189.00	90.93	321.34	8541.81	2883.58	2166.45	-1903.41	2883.83	318.70	0.76	128.96R
	11284.00	90.38	322.02	8540.72	2978.50	2240.98	-1962.31	2978.70	318.79	0.92	171.3R
	11380.00	88.42	322.32	8541.73	3074.38	2316.80	-2021.18	3074.53	318.90	2.07	34.64L
	11475.00	88.97	321.94	8543.89	3169.25	2391.77	-2079.48	3169.36	319.00	0.70	27R
	11571.00	91.07	323.01	8543.86	3265.11	2467.90	-2137.95	3265.18	319.10	2.46	146.74R
	11665.00	89.85	323.81	8543.10	3358.88	2543.37	-2193.98	3358.91	319.22	1.55	142.91L
Survey 26-Dec-12	11761.00	89.44	323.50	8543.70	3454.62	2620.70	-2250.87	3454.63	319.34	0.54	171.56R
	11856.00	87.89	323.73	8545.91	3549.35	2697.15	-2307.21	3549.35	319.46	1.65	175.55R
	11951.00	86.35	323.85	8550.69	3643.95	2773.70	-2363.26	3643.96	319.57	1.63	157.41L
	12045.00	85.32	323.42	8557.51	3737.45	2849.20	-2418.85	3737.48	319.67	1.19	145.3R

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
	12140.00	84.63	323.90	8565.83	3831.83	2925.43	-2474.92	3831.89	319.77	0.88	39.56L
	12236.00	86.42	322.42	8573.32	3927.33	3002.02	-2532.31	3927.43	319.85	2.42	29.08L
	12331.00	88.56	321.23	8577.48	4022.15	3076.62	-2590.96	4022.27	319.90	2.58	12.8L
	12427.00	91.07	320.66	8577.79	4118.11	3151.16	-2651.44	4118.25	319.92	2.68	107.24L
	12522.00	90.89	320.08	8576.17	4213.09	3224.32	-2712.03	4213.23	319.93	0.64	27.64L
Survey 28-Dec-12	12617.00	91.10	319.97	8574.52	4308.07	3297.11	-2773.05	4308.22	319.93	0.25	149.04L
	12712.00	91.00	319.91	8572.78	4403.05	3369.81	-2834.18	4403.20	319.93	0.12	107.93L
	12806.00	90.89	319.57	8571.23	4497.04	3441.53	-2894.92	4497.19	319.93	0.38	52.12L
	12901.00	91.10	319.30	8569.58	4592.02	3513.69	-2956.69	4592.17	319.92	0.36	127.7L
	12996.00	90.93	319.08	8567.90	4687.00	3585.58	-3018.77	4687.15	319.91	0.29	99.09L
	13091.00	90.89	318.83	8566.39	4781.99	3657.22	-3081.14	4782.12	319.89	0.27	113.88L
	13187.00	90.58	318.13	8565.16	4877.97	3729.09	-3144.78	4878.09	319.86	0.80	69.23L
	13283.00	90.69	317.84	8564.09	4973.93	3800.41	-3209.03	4974.03	319.82	0.32	56.31L
	13378.00	90.79	317.69	8562.87	5068.88	3870.74	-3272.88	5068.96	319.78	0.19	98.29L
	13474.00	90.72	317.21	8561.60	5164.81	3941.46	-3337.79	5164.87	319.74	0.51	22.38R
	13568.00	90.89	317.28	8560.28	5258.73	4010.47	-3401.60	5258.78	319.70	0.20	133.83L
	13664.00	90.41	316.78	8559.19	5354.64	4080.71	-3467.03	5354.67	319.65	0.72	148.39L
	13759.00	89.76	316.38	8559.05	5449.52	4149.71	-3532.32	5449.53	319.59	0.80	148R
	13855.00	88.80	316.98	8560.26	5545.40	4219.55	-3598.18	5545.40	319.54	1.18	179.1R
	13951.00	86.25	317.02	8564.40	5641.21	4289.69	-3663.59	5641.21	319.50	2.66	15.11R
	14046.00	88.62	317.66	8568.65	5736.04	4359.47	-3727.89	5736.04	319.47	2.58	17.87R
	14142.00	90.45	318.25	8569.43	5832.00	4430.76	-3792.18	5832.00	319.44	2.00	120.38R
	14234.00	90.28	318.54	8568.85	5923.99	4499.55	-3853.27	5923.99	319.42	0.37	98.94R
	14329.00	90.14	319.43	8568.50	6018.98	4571.23	-3915.61	6018.98	319.42	0.95	101.57R
	14425.00	89.97	320.26	8568.41	6114.98	4644.60	-3977.52	6114.98	319.42	0.88	158.5R
	14520.00	89.31	320.52	8569.00	6209.96	4717.79	-4038.08	6209.96	319.44	0.75	177.69R
	14616.00	88.07	320.57	8571.20	6305.92	4791.89	-4099.07	6305.92	319.46	1.29	172.79R
Final Survey	14706.00	85.39	320.91	8576.33	6395.74	4861.46	-4155.93	6395.74	319.47	3.00	HS
Proj to TD	14785.00	85.39	320.91	8582.68	6474.46	4922.58	-4205.58	6474.46	319.49	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	18.000	Act Stns	30.000	30.000	SLB_NSG+SSHOT-Depth Only	Original Borehole / Cimarex Irwin 23-14 Federal #3H Gyro+MWD
	18.000	1653.300	Act Stns	30.000	30.000	SLB_NSG+SSHOT	Original Borehole / Cimarex Irwin 23-14 Federal #3H Gyro+MWD
	1653.300	14706.000	Act Stns	30.000	30.000	SLB_MWD-STD	Original Borehole / Cimarex Irwin 23-14 Federal #3H Gyro+MWD

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
		14706.000	14785.000		Act Stns	30.000	30.000	SLB_BLIND+TREND		Original Borehole / Cimarex Irwin 23-14 Federal #3H Gyro+MWD	