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Cimarex

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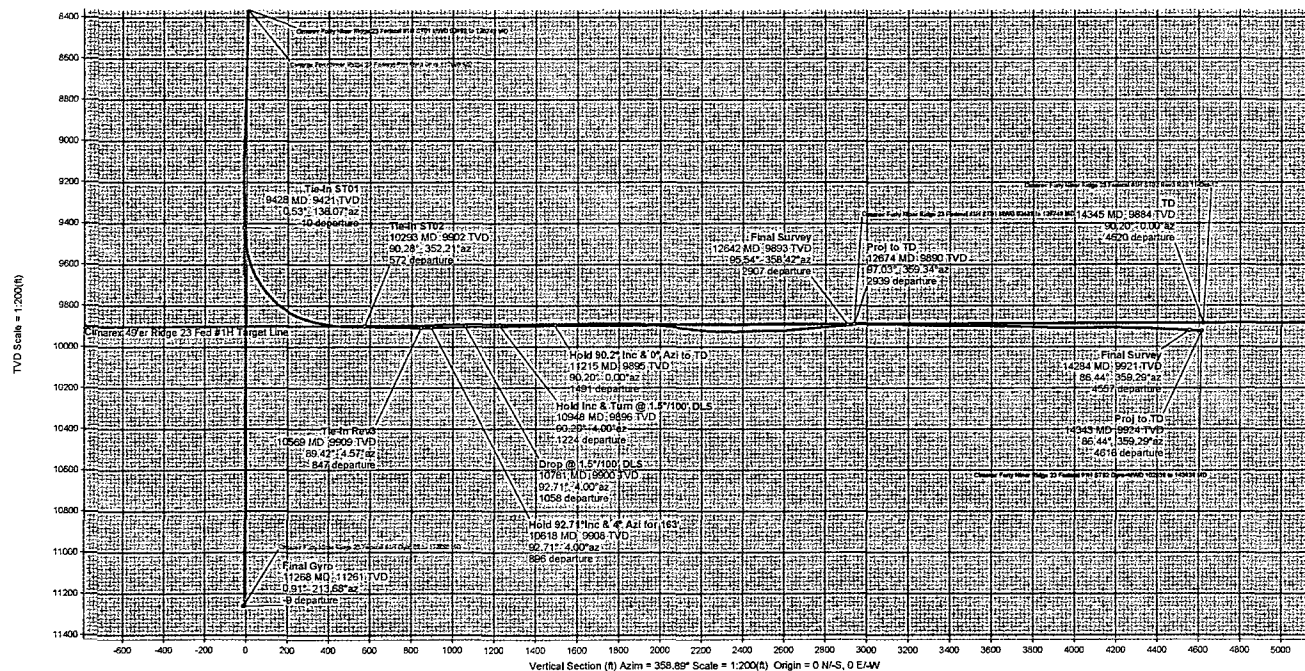
WELL Forty Niner Ridge 23 Federal #1H			FIELD NM Eddy County			STRUCTURE Key 881		
Magnetic Parameters Model: BGMN 2012 Dip: 66.123° Mag Dec: 7.658°			Location Lat: N 32 17 2 964 Long: W 103 36 41 577 Easting: 692283.40 RU/S Scale Fact: 0.99995519			Magnetic Parameters Date: October 06, 2012 FS 48479.567		
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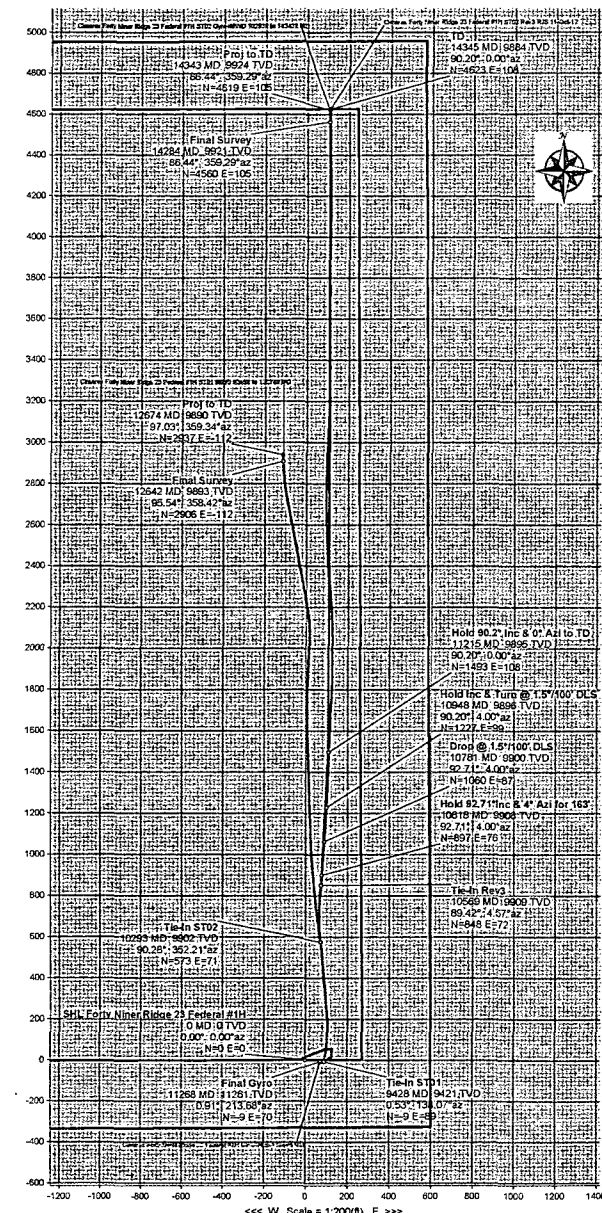
Legend

Forty Niner Ridge 23 Federal #1H Target Line
Forty Niner Ridge 23 Federal #1H Lateral Line
Forty Niner Ridge 23 Federal #1H
Forty Niner Ridge 23 Federal #1H STW Well 825 14-04-12
Forty Niner Ridge 23 Federal #1H STW Well 825 14-04-12
Forty Niner Ridge 23 Federal #1H STW Well 825 14-04-12
Forty Niner Ridge 23 Federal #1H STW Well 825 14-04-12
Forty Niner Ridge 23 Federal #1H STW Well 825 14-04-12

Grid North
 Tot Corr (M->G 7.3969°)
 Mag Dec (7.658°)
 Grid Conv (0.261°)



Scale = 1:200(ft) N



Drawn By: J. Schaefer
 Data Created: October 11, 2012 04:18:58 PM
 Checked By:
 Checked Date:
 Approved By:
 Approved Date:



Cimarex Forty Niner Ridge 23 Federal #1H ST02 Gyro+MWD 10293ft to 14343ft MD (Def Survey)



Report Date:	October 18, 2012 - 08:43 AM	Survey / DLS Computation:	Minimum Curvature / Lubinski
Client:	Cimarex	Vertical Section Azimuth:	358.887 ° (Grid North)
Field:	NM Eddy County (NAD 83)	Vertical Section Origin:	0.000 ft, 0.000 ft
Structure / Slot:	Key 881 / Cimarex Forty Niner Ridge 23 Federal #1H	TVD Reference Datum:	RKB
Well:	Cimarex Forty Niner Ridge 23 Federal #1H	TVD Reference Elevation:	3307.000 ft above
Borehole:	ST02	Seabed / Ground Elevation:	3287.000 ft above
UWI / API#:	Unknown / Unknown	Magnetic Declination:	7.658 °
Survey Name:	Cimarex Forty Niner Ridge 23 Federal #1H ST02 Gyro+MWD 10293ft to 14343ft MD	Total Gravity Field Strength:	999.1804 mgn (9.8 based)
Survey Date:	October 06, 2012	Total Magnetic Field Strength:	48479.498 nT
Tort / AHD / DDI / ERD Ratio:	215.906 ° / 4897.424 ft / 6.184 / 0.493	Magnetic Dip Angle:	60.123 °
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	Declination Date:	October 06, 2012
Location Lat / Long:	N 32° 17' 2.90425", W 103° 50' 41.57717"	Magnetic Declination Model:	BGGM 2012
Location Grid N/E Y/X:	N 467446.600 ftUS, E 692283.400 ftUS	North Reference:	Grid North
CRS Grid Convergence Angle:	0.2609 °	Grid Convergence Used:	0.2609 °
Grid Scale Factor:	0.99993519	Total Corr Mag North->Grid North:	7.3969 °
		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 Forty Niner Ridge 23 Federal #1H	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	46.33M
	99.40	0.22	46.33	99.40	0.13	0.13	0.14	0.19	46.33	0.22	337.18M
	162.90	0.32	337.18	162.90	0.38	0.38	0.16	0.41	22.54	0.50	278.42M
	226.30	1.19	278.42	226.29	0.65	0.64	-0.56	0.85	318.64	1.67	273.15M
	353.30	1.15	273.15	353.27	0.96	0.90	-3.14	3.27	286.03	0.09	271.92M
	416.70	1.12	271.92	416.65	1.04	0.96	-4.39	4.50	282.30	0.06	273.71M
	480.20	0.99	273.71	480.14	1.12	1.01	-5.56	5.65	280.33	0.21	274.16M
	543.60	0.99	274.16	543.53	1.22	1.09	-6.65	6.74	279.30	0.01	271.66M
	607.10	0.96	271.66	607.03	1.29	1.14	-7.73	7.82	278.42	0.08	268.57M
	670.60	0.93	268.57	670.52	1.32	1.15	-8.78	8.85	277.44	0.09	269.57M
	734.00	0.95	269.57	733.91	1.32	1.13	-9.82	9.89	276.57	0.04	270.35M
	797.50	0.93	270.35	797.40	1.34	1.13	-10.86	10.92	275.94	0.04	266.87M
	861.00	0.88	266.87	860.89	1.34	1.11	-11.86	11.92	275.33	0.12	260.2M
	987.90	0.76	260.20	987.78	1.17	0.91	-13.67	13.70	273.81	0.12	252.17M
	1051.30	0.60	252.17	1051.17	1.02	0.74	-14.40	14.42	272.93	0.29	255.72M
	1114.80	0.40	255.72	1114.67	0.87	0.58	-14.93	14.94	272.22	0.32	258.68M
	1178.30	0.28	258.68	1178.17	0.79	0.49	-15.30	15.30	271.85	0.19	284.23M
	1241.70	0.13	284.23	1241.57	0.78	0.48	-15.52	15.52	271.78	0.27	94.08M
	1305.20	0.06	94.08	1305.07	0.80	0.50	-15.55	15.56	271.83	0.30	53.46M
	1368.60	0.11	53.46	1368.47	0.83	0.53	-15.47	15.48	271.97	0.12	70.11M
	1432.10	0.17	70.11	1431.97	0.90	0.60	-15.33	15.35	272.24	0.11	76.35M
	1495.60	0.20	76.35	1495.47	0.95	0.66	-15.14	15.15	272.49	0.06	66.55M
	1559.00	0.23	66.55	1558.87	1.02	0.73	-14.91	14.93	272.82	0.07	47.73M
	1622.50	0.29	47.73	1622.37	1.18	0.89	-14.68	14.70	273.48	0.16	40.74M
	1685.90	0.33	40.74	1685.77	1.42	1.14	-14.44	14.48	274.51	0.09	34.55M
	1749.40	0.37	34.55	1749.27	1.72	1.45	-14.20	14.28	275.82	0.09	32.91M
	1812.80	0.37	32.91	1812.67	2.06	1.79	-13.98	14.09	277.29	0.02	28.19M
	1876.30	0.42	28.19	1876.16	2.43	2.16	-13.76	13.92	278.94	0.09	37.24M
	1939.80	0.46	37.24	1939.66	2.83	2.57	-13.49	13.73	280.60	0.13	33.84M
	2003.20	0.56	33.84	2003.06	3.29	3.03	-13.16	13.51	282.97	0.16	34.96M
	2066.70	0.72	34.96	2066.56	3.86	3.62	-12.76	13.27	285.82	0.25	40.75M
	2130.20	0.76	40.75	2130.05	4.50	4.26	-12.26	12.98	289.18	0.13	38.94M
	2193.60	0.85	38.94	2193.44	5.17	4.95	-11.69	12.69	292.94	0.15	30.67M
	2257.10	1.33	30.67	2256.93	6.16	5.95	-11.02	12.52	298.36	0.79	42.43M
	2320.50	1.59	42.43	2320.31	7.42	7.23	-10.05	12.38	305.73	0.62	44.93M
	2384.00	2.00	44.93	2383.78	8.83	8.66	-8.67	12.26	314.98	0.66	57.32M
	2447.40	1.99	57.32	2447.14	10.18	10.04	-6.96	12.22	325.26	0.68	59.43M
	2510.90	3.50	59.43	2510.57	11.71	11.62	-4.37	12.42	339.41	2.38	61.44M
	2574.40	3.74	61.44	2573.94	13.61	13.60	-0.88	13.63	356.30	0.43	64.17M
	2637.80	4.57	64.17	2637.17	15.62	15.69	3.21	16.01	11.57	1.35	66.69M
	2701.30	5.39	66.69	2700.43	17.81	17.97	8.23	19.76	24.60	1.34	68.43M
	2764.80	5.62	68.43	2763.64	20.02	20.29	13.86	24.57	34.33	0.45	65.43M
	2828.20	6.31	65.43	2826.70	22.49	22.88	19.91	30.33	41.03	1.19	67.23M
	2891.70	6.67	67.23	2889.79	25.24	25.76	26.49	36.95	45.79	0.65	67.64M
	2955.10	6.78	67.64	2952.75	27.96	28.61	33.34	43.94	49.37	0.19	68.22M
	3018.60	6.61	68.22	3015.82	30.61	31.39	40.20	51.01	52.01	0.29	70.25M
	3082.10	6.58	70.25	3078.90	33.06	33.98	47.02	58.01	54.15	0.37	67.76M
	3145.50	6.52	67.76	3141.89	35.52	36.57	53.77	65.03	55.78	0.46	69.14M
	3209.00	5.91	69.14	3205.01	37.92	39.10	60.16	71.75	56.98	0.99	65.62M
	3335.90	5.72	65.62	3331.26	42.63	44.03	72.03	84.42	58.56	0.32	64.8M
	3399.30	4.97	64.80	3394.38	45.00	46.51	77.39	90.29	59.00	1.19	69.88M
	3462.80	4.46	69.88	3457.67	46.92	48.53	82.20	95.45	59.44	1.04	70.74M
	3526.30	4.51	70.74	3520.98	48.50	50.20	86.87	100.34	59.98	0.13	68.59M
	3589.70	3.88	68.59	3584.21	50.02	51.81	91.22	104.91	60.41	1.02	77.23M

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (°)	DLS (*/100ft)	TF (°)
	3653.20	3.43	77.23	3647.58	51.15	53.01	95.08	108.86	60.86	1.12	85M
	3716.70	3.03	85.00	3710.98	51.65	53.58	98.60	112.22	61.48	0.93	85.32M
	3780.10	2.14	85.32	3774.31	51.84	53.82	101.45	114.84	62.05	1.40	83.05M
	3843.60	1.78	83.05	3837.77	52.01	54.04	103.61	116.86	62.46	0.58	83.37M
	3907.00	1.60	83.37	3901.15	52.20	54.26	105.47	118.61	62.78	0.28	96.93M
	3970.50	1.48	96.93	3964.62	52.17	54.26	107.16	120.12	63.15	0.60	86.34M
	4033.90	1.35	86.34	4028.00	52.09	54.21	108.72	121.49	63.50	0.46	88.51M
	4097.40	1.31	88.51	4091.49	52.12	54.28	110.19	122.83	63.78	0.10	93.58M
	4160.90	1.38	93.58	4154.97	52.07	54.25	111.68	124.16	64.09	0.22	90.9M
	4224.30	1.26	90.90	4218.35	51.98	54.19	113.14	125.45	64.41	0.21	86.24M
	4287.80	1.17	86.24	4281.84	51.99	54.22	114.49	126.68	64.66	0.21	79.19M
	4351.30	1.12	79.19	4345.33	52.12	54.38	115.74	127.88	64.83	0.24	114.38M
	4414.70	1.04	114.38	4408.71	51.98	54.26	116.87	128.85	65.10	1.04	81.1M
	4478.20	1.07	81.10	4472.20	51.81	54.11	117.99	129.80	65.36	0.95	87.58M
	4541.60	1.08	87.58	4535.59	51.90	54.23	119.17	130.93	65.53	0.19	89.91M
	4605.10	1.03	89.91	4599.08	51.91	54.25	120.34	132.00	65.73	0.10	90.05M
	4668.60	0.92	90.05	4662.57	51.89	54.25	121.42	132.99	65.92	0.17	60.08M
	4732.00	0.74	60.08	4725.97	52.07	54.46	122.28	133.86	65.99	0.73	93.05M
	4795.50	0.66	93.05	4789.46	52.24	54.64	123.00	134.59	66.05	0.64	99.2M
	4858.90	0.50	99.20	4852.86	52.17	54.58	123.64	135.15	66.18	0.27	101.58M
	4985.90	0.58	101.58	4979.85	51.93	54.36	124.82	136.14	66.46	0.37	71.73M
	5049.30	0.50	71.73	5043.25	51.94	54.38	125.39	136.68	66.55	0.46	67.09M
	5112.80	0.42	67.09	5106.75	52.11	54.56	125.87	137.19	66.56	0.14	70.01M
	5176.20	0.34	70.01	5170.15	52.25	54.72	126.26	137.61	66.57	0.13	70.31M
	5239.70	0.28	70.31	5233.65	52.36	54.83	126.58	137.95	66.58	0.09	62.1M
	5303.10	0.18	62.10	5297.05	52.46	54.93	126.82	138.20	66.58	0.17	67.8M
	5366.60	0.17	67.80	5360.55	52.54	55.01	126.99	138.40	66.58	0.03	75.71M
	5430.10	0.14	75.71	5424.05	52.59	55.07	127.16	138.57	66.58	0.06	89.45M
	5493.50	0.11	89.45	5487.45	52.61	55.09	127.29	138.70	66.60	0.07	94.52M
	5557.00	0.08	94.52	5550.95	52.60	55.09	127.40	138.80	66.62	0.05	117.02M
	5620.40	0.07	117.02	5614.35	52.58	55.06	127.47	138.86	66.64	0.05	160.65M
	5683.90	0.09	160.65	5677.85	52.51	55.00	127.53	138.88	66.67	0.10	165.14M
	5747.40	0.13	165.14	5741.35	52.40	54.88	127.56	138.87	66.72	0.06	182.89M
	5810.80	0.17	182.89	5804.75	52.23	54.72	127.57	138.81	66.78	0.10	150.76M
	5874.30	0.29	150.76	5868.24	52.00	54.49	127.65	138.79	66.89	0.27	162.98M
	5937.80	0.45	162.98	5931.74	51.61	54.11	127.80	138.78	67.05	0.28	173.25M
	6001.20	0.53	173.25	5995.14	51.08	53.58	127.91	138.68	67.27	0.19	188.18M
	6064.70	0.61	188.18	6058.64	50.46	52.95	127.89	138.42	67.51	0.26	183.57M
	6128.10	0.78	183.57	6122.03	49.69	52.19	127.82	138.06	67.79	0.28	182.14M
	6191.60	0.76	182.14	6185.53	48.84	51.33	127.78	137.70	68.11	0.04	186.79M
	6255.10	0.73	186.79	6249.02	48.02	50.51	127.71	137.34	68.42	0.11	185.68M
	6318.50	0.92	185.68	6312.42	47.12	49.60	127.61	136.92	68.76	0.30	203.7M
	6382.00	0.96	203.70	6375.91	46.13	48.61	127.35	136.31	69.11	0.47	189.1M
	6445.40	0.95	189.10	6439.30	45.13	47.60	127.05	135.68	69.46	0.38	178.44M
	6508.90	0.99	178.44	6502.79	44.06	46.54	126.99	135.24	69.87	0.29	179.61M
	6572.40	0.91	179.61	6566.28	43.01	45.48	127.00	134.90	70.30	0.13	169.54M
	6635.80	0.91	169.54	6629.67	42.01	44.49	127.10	134.66	70.71	0.25	186.93M
	6699.30	0.96	186.93	6693.16	40.98	43.46	127.13	134.35	71.13	0.45	189.32M
	6762.70	1.08	189.32	6756.55	39.87	42.34	126.96	133.84	71.56	0.20	192.41M
	6826.20	1.05	192.41	6820.04	38.72	41.19	126.74	133.27	72.00	0.10	191.38M
	6889.60	1.04	191.38	6883.43	37.59	40.05	126.50	132.69	72.43	0.03	187.25M
	6953.10	1.11	187.25	6946.92	36.42	38.88	126.31	132.16	72.89	0.16	190.66M
	7016.60	1.21	190.66	7010.41	35.15	37.61	126.11	131.60	73.39	0.19	180.57M
	7080.00	1.20	180.57	7073.79	33.83	36.29	125.98	131.10	73.93	0.33	171.92M
	7143.50	1.38	171.92	7137.28	32.41	34.87	126.08	130.81	74.54	0.42	168.68M
	7206.90	1.42	168.68	7200.66	30.88	33.34	126.34	130.67	75.22	0.14	166.17M
	7270.40	1.51	166.17	7264.14	29.29	31.76	126.70	130.62	75.93	0.17	168.3M
	7333.90	1.48	168.30	7327.62	27.67	30.14	127.06	130.59	76.66	0.10	168.89M
	7397.30	1.55	168.89	7391.00	26.02	28.50	127.40	130.54	77.39	0.11	172.43M
	7460.80	1.76	172.43	7454.47	24.20	26.69	127.69	130.45	78.19	0.37	174.08M
	7524.30	1.82	174.08	7517.94	22.23	24.72	127.92	130.29	79.06	0.12	175.81M
	7587.70	1.98	175.81	7581.30	20.13	22.63	128.11	130.09	79.98	0.27	177.11M
	7651.20	1.98	177.11	7644.76	17.94	20.44	128.24	129.86	80.95	0.07	183.73M
	7714.60	1.83	183.73	7708.13	15.84	18.33	128.23	129.53	81.86	0.42	189.49M
	7778.10	1.72	189.49	7771.60	13.89	16.38	128.01	129.05	82.71	0.33	309.18M
	7841.60	1.48	309.18	7835.09	13.48	15.96	127.21	128.21	82.85	4.36	187.79M
	7905.00	1.38	187.79	7898.48	13.26	15.72	126.48	127.45	82.92	3.93	214.57M
	7968.50	0.80	214.57	7961.97	12.14	14.60	126.12	126.96	83.40	1.19	235.25M
	8031.90	1.29	235.25	8025.36	11.39	13.83	125.28	126.04	83.70	0.96	243.95M
	8095.40	2.46	243.95	8088.82	10.42	12.47	123.47	124.14	84.07	1.89	241.24M
	8158.90	2.53	241.24	8152.26	9.19	11.55	121.02	121.57	84.55	0.22	255.56M
	8222.30	2.08	255.56	8215.61	8.28	10.59	118.68	119.15	84.90	1.15	264.55M
	8285.80	1.95	264.55	8279.07	7.93	10.20	116.49	116.93	85.00	0.54	251.82M
	8349.20	1.64	251.82	8342.44	7.58	9.81	114.55	114.97	85.10	0.79	241.71M
	8412.70	1.91	241.71	8405.91	6.83	9.03	112.76	113.12	85.42	0.65	222.05M
	8476.10	2.14	222.05	8469.27	5.49	7.65	111.03	111.30	86.06	1.15	220.05M
	8539.60	2.02	220.05	8532.73	3.78	5.91	109.52	109.68	86.91	0.22	226.39M
	8603.10	2.15	226.39	8596.19	2.13	4.23	107.94	108.02	87.76	0.42	234.08M
	8666.50	2.60	234.08	8659.53	0.51	2.57	105.91	105.94	88.61	0.87	235.04M
	8730.00	2.69	235.04	8722.96	-1.14	0.87	103.52	103.53	89.52	0.16	230.87M
	8793.50	2.31	230.87	8786.40	-2.76	-0.79	101.31	101.31	90.45	0.66	229.76M

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (°)	DLS (*/100ft)	TF (°)
	8856.90	2.56	229.76	8849.75	-4.44	-2.51	99.24	99.27	91.45	0.40	222.58M
	8920.40	2.57	222.58	8913.18	-6.37	-4.48	97.19	97.29	92.64	0.51	215.34M
	8983.80	2.53	215.34	8976.52	-8.52	-6.67	95.42	95.65	94.00	0.51	208.37M
	9047.30	2.33	208.37	9039.96	-10.77	-8.95	94.00	94.42	95.44	0.56	244.41M
	9110.80	1.58	244.41	9103.43	-12.26	-10.46	92.59	93.18	96.45	2.21	259.97M
Tie-In ST01	9174.20	0.98	259.97	9166.81	-12.70	-10.93	91.27	91.92	96.83	1.09	311.47M
	9237.70	1.24	311.47	9230.30	-12.32	-10.57	90.22	90.84	96.68	1.56	320.98M
	9301.10	1.06	320.98	9293.69	-11.40	-9.66	89.34	89.86	96.17	0.41	353.89M
	9364.60	0.50	353.89	9357.18	-10.66	-8.93	88.94	89.39	95.73	1.10	138.07M
	9428.00	0.53	138.07	9420.58	-10.60	-8.87	89.10	89.55	95.69	1.55	350.97M
	9456.00	3.82	350.97	9448.56	-9.78	-8.05	89.04	89.41	95.16	15.27	350.52M
	9469.00	4.80	350.52	9461.53	-8.81	-7.08	88.89	89.17	94.56	7.54	7.44M
	9501.00	6.96	7.44	9493.36	-5.57	-3.84	88.92	89.00	92.47	8.59	7.17M
	9532.00	10.75	7.17	9523.98	-0.85	0.89	89.52	89.53	89.43	12.23	23.99R
	9564.00	13.78	12.72	9555.25	5.81	7.57	90.73	91.05	85.23	10.15	4.57R
Survey 27-Sep-12	9596.00	18.00	13.81	9586.02	14.29	16.10	92.75	94.14	80.16	13.22	HS
	9628.00	21.88	13.81	9616.10	24.83	26.69	95.36	99.02	74.36	12.13	18.13L
	9660.00	26.42	10.50	9645.29	37.58	39.49	98.08	105.73	68.07	14.80	24.85L
	9692.00	29.93	7.28	9673.50	52.45	54.41	100.39	114.19	61.54	11.95	26.48L
	9724.00	34.29	3.48	9700.60	69.35	71.34	101.95	124.43	55.02	15.01	4.91L
	9755.00	37.48	3.03	9725.71	87.46	89.48	102.98	136.42	49.01	10.33	14.15L
	9787.00	41.63	1.46	9750.38	107.80	109.84	103.77	151.10	43.37	13.34	3.96L
	9819.00	45.66	1.07	9773.53	129.86	131.91	104.25	168.13	38.32	12.62	11.33L
	9851.00	50.32	359.86	9794.94	153.62	155.68	104.43	187.46	33.85	14.83	21.76L
	9883.00	54.07	358.02	9814.55	178.90	180.95	103.96	206.69	29.88	12.57	19.43L
Survey 29-Sep-12	9914.00	59.13	355.95	9831.61	204.75	206.79	102.58	230.83	26.38	17.25	15.47L
	9946.00	64.67	354.26	9846.68	232.91	234.90	100.16	255.36	23.09	17.93	5.28R
	9978.00	69.33	354.72	9859.18	262.27	264.21	97.34	281.57	20.22	14.62	9.54R
	10009.00	72.51	355.28	9869.31	291.50	293.39	94.79	308.32	17.90	10.40	2.95R
	10041.00	75.52	355.44	9878.12	322.20	324.05	92.30	336.94	15.90	9.42	4.03R
	10073.00	77.88	355.61	9885.48	353.28	355.09	89.87	366.29	14.20	7.39	6.84L
	10105.00	80.43	355.30	9891.50	384.65	386.42	87.38	396.18	12.74	8.03	1.61L
	10136.00	82.90	355.23	9896.00	415.26	416.99	84.85	425.53	11.50	7.97	2.97R
	10166.00	86.56	355.42	9898.75	445.07	446.76	82.41	454.29	10.45	12.22	8.13R
	10198.00	88.45	355.69	9900.15	476.99	478.63	79.93	485.26	9.48	5.97	63.43L
Tie-In ST02	10230.00	88.49	355.61	9901.00	508.92	510.52	77.51	516.37	8.63	0.28	62.26L
	10293.00	90.28	352.21	9901.68	571.67	573.15	70.83	577.51	7.04	6.10	127.14R
	10319.00	89.00	353.90	9901.84	597.53	598.96	67.68	602.77	6.45	8.15	100.19R
	10355.00	88.45	356.97	9902.64	633.45	634.83	64.82	638.13	5.83	8.66	95.54R
	10387.00	88.28	358.73	9903.55	665.43	666.80	63.62	669.82	5.45	5.52	81R
Survey 11-Oct-12	10418.00	88.55	0.43	9904.41	696.42	697.78	63.39	700.66	5.19	5.55	76.83R
	10450.00	89.04	2.52	9905.09	728.38	729.76	64.21	732.58	5.03	6.71	106.31R
	10482.00	88.73	3.58	9905.71	760.29	761.71	65.92	764.56	4.95	3.45	146.86R
	10513.00	87.46	4.41	9906.74	791.15	792.62	68.08	795.54	4.91	4.89	16.55L
	10545.00	87.83	4.30	9908.05	822.97	824.50	70.50	827.51	4.89	1.21	9.64R
	10569.00	89.42	4.57	9908.63	846.85	848.42	72.36	851.50	4.87	6.72	1.13R
	10609.00	93.47	4.65	9907.62	886.63	888.27	75.57	891.48	4.86	10.13	129.47L
	10641.00	92.68	3.69	9905.90	918.45	920.14	77.89	923.43	4.84	3.88	135L
	10673.00	91.71	2.72	9904.68	950.34	952.06	79.68	955.39	4.78	4.29	153.44R
	10704.00	91.19	2.98	9903.89	981.25	983.01	81.22	986.36	4.72	1.88	154.1L
Survey 14-Oct-12	10736.00	90.84	2.81	9903.33	1013.17	1014.97	82.84	1018.34	4.67	1.22	77.12R
	10768.00	90.92	3.16	9902.84	1045.08	1046.92	84.51	1050.33	4.61	1.12	63.43L
	10799.00	91.01	2.98	9902.31	1076.00	1077.87	86.17	1081.31	4.57	0.65	LS
	10862.00	90.84	2.98	9901.30	1138.83	1140.78	89.44	1144.28	4.48	0.27	72.89L
	10925.00	90.92	2.72	9900.33	1201.67	1203.69	92.57	1207.25	4.40	0.43	123.18L
	10989.00	90.75	2.46	9899.40	1265.53	1267.62	95.46	1271.21	4.31	0.49	90R
	11052.00	90.75	2.63	9898.57	1328.39	1330.55	98.26	1334.18	4.22	0.27	67.24R
	11116.00	91.01	3.25	9897.59	1392.23	1394.46	101.54	1398.15	4.16	1.05	90R
	11179.00	91.01	3.77	9896.48	1455.01	1457.33	105.40	1461.14	4.14	0.83	41.63L
	11243.00	91.10	3.69	9895.30	1518.77	1521.19	109.56	1525.13	4.12	0.19	125.5L
Survey 15-Oct-12	11306.00	89.78	1.84	9894.82	1581.62	1584.11	112.60	1588.10	4.07	3.61	80.27R
	11370.00	89.96	2.89	9894.96	1645.50	1648.05	115.24	1652.08	4.00	1.66	77.26R
	11433.00	90.22	4.04	9894.86	1708.30	1710.94	119.05	1715.07	3.98	1.87	103.13L
	11497.00	89.87	2.54	9894.81	1772.11	1774.83	122.72	1779.07	3.96	2.41	71.57L
	11560.00	90.22	1.49	9894.76	1835.02	1837.79	124.94	1842.03	3.89	1.76	93.78L
	11624.00	90.04	358.77	9894.62	1898.99	1901.78	125.08	1905.89	3.76	4.26	59.44R
	11688.00	90.66	359.82	9894.23	1962.99	1965.78	124.30	1969.70	3.62	1.91	44.99L
	11752.00	91.54	358.94	9893.00	2026.97	2029.76	123.60	2033.52	3.48	1.94	44.99L
	11815.00	91.71	358.77	9891.21	2089.95	2092.72	122.34	2096.29	3.35	0.38	123.44L
	11878.00	91.36	358.24	9889.52	2152.92	2155.68	120.70	2159.05	3.20	1.01	127.19L
Survey 15-Oct-12	11942.00	89.69	356.04	9888.94	2216.89	2219.59	117.51	2222.70	3.03	4.32	101.94L
	12006.00	89.43	354.81	9889.43	2280.77	2283.38	112.40	2286.15	2.82	1.96	79.07R
	12069.00	89.60	355.69	9889.96	2343.64	2346.16	107.19	2348.61	2.62	1.42	63.15R
	12133.00	90.40	357.27	9889.96	2407.58	2410.04	103.26	2412.25	2.45	2.77	54.63R
	12197.00	90.84	357.89	9889.27	2471.56	2473.98	100.56	2476.02	2.33	1.19	HS
	12260.00	91.19	357.89	9888.15	2534.54	2536.92	98.24	2538.82	2.22	0.56	159.01R
	12324.00	89.60	358.50	9887.71	2598.53	2600.89	96.22	2602.67	2.12	2.66	45R
	12386.00	89.69	358.59	9888.10	2660.53	2662.87	94.65	2664.55	2.04	0.21	73.55R
	12450.00	90.13	0.08	9888.20	2724.52	2726.86	93.90	2728.48	1.97	2.43	100.71R
	12514.00	89.78	1.93	9888.25	2788.48	2790.85	95.03	2792.47	1.95	2.94	75.58L
Survey 15-Oct-12	12577.00	89.96	1.23	9888.39	2851.41	2853.82	96.76	2855.46	1.94	1.15	45.81L
	12641.00	90.31	0.87	9888.24	2915.36	2917.81	97.94	2919.46	1.92	0.78	60.55R

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
	12704.00	90.66	1.49	9887.71	2978.31	2980.80	99.23	2982.45	1.91	1.13	126.31R
	12768.00	89.69	2.81	9887.51	3042.20	3044.75	101.63	3046.44	1.91	2.56	146.15R
	12831.00	88.90	3.34	9888.29	3105.03	3107.65	105.01	3109.43	1.94	1.51	100.13L
	12895.00	88.46	0.87	9889.76	3168.90	3171.59	107.36	3173.40	1.94	3.92	99.21L
	12958.00	88.29	359.82	9891.55	3231.86	3234.56	107.74	3236.35	1.91	1.69	46.63L
	13022.00	88.46	359.64	9893.36	3295.82	3298.53	107.44	3300.28	1.87	0.39	78.44R
	13086.00	88.55	0.08	9895.03	3359.79	3362.51	107.29	3364.22	1.83	0.70	18.87R
Survey 16-Oct-12	13149.00	89.34	0.35	9896.19	3422.76	3425.50	107.52	3427.19	1.80	1.33	HS
	13213.00	89.69	0.35	9896.73	3486.74	3489.50	107.91	3491.16	1.77	0.55	142.35L
	13277.00	89.34	0.08	9897.28	3550.72	3553.49	108.15	3555.14	1.74	0.69	162.9L
	13340.00	89.08	360.00	9898.14	3613.70	3616.49	108.20	3618.10	1.71	0.43	144.17R
	13403.00	88.72	0.26	9899.35	3676.68	3679.47	108.34	3681.07	1.69	0.70	145.32L
	13467.00	88.46	0.08	9900.93	3740.64	3743.46	108.53	3745.03	1.66	0.49	128.53L
	13530.00	87.76	359.20	9903.01	3803.60	3806.42	108.13	3807.95	1.63	1.78	LS
	13594.00	87.58	359.20	9905.61	3867.55	3870.36	107.24	3871.84	1.59	0.28	26.75R
	13658.00	88.81	359.82	9907.62	3931.51	3934.32	106.69	3935.77	1.55	2.15	32.38R
	13721.00	90.75	1.05	9907.87	3994.48	3997.32	107.17	3998.75	1.54	3.65	27.89L
	13784.00	90.92	0.96	9906.95	4057.43	4060.30	108.28	4061.74	1.53	0.31	110.37L
	13848.00	90.66	0.26	9906.06	4121.40	4124.29	108.96	4125.73	1.51	1.17	162.67L
Survey 17-Oct-12	13911.00	89.25	359.82	9906.11	4184.38	4187.29	109.00	4188.71	1.49	2.34	161.79R
	13975.00	88.46	0.08	9907.39	4248.36	4251.28	108.95	4252.67	1.47	1.30	105.59L
	14038.00	88.29	359.47	9909.18	4311.32	4314.25	108.70	4315.62	1.44	1.00	148.48L
	14102.00	87.85	359.20	9911.34	4375.29	4378.21	107.96	4379.54	1.41	0.81	LS
	14165.00	87.41	359.20	9913.94	4438.23	4441.15	107.08	4442.44	1.38	0.70	168.02L
	14229.00	86.61	359.03	9917.28	4502.14	4505.05	106.09	4506.30	1.35	1.28	123.23R
Final Survey	14284.00	86.44	359.29	9920.61	4557.04	4559.95	105.29	4561.16	1.32	0.56	HS
Proj to TD	14343.00	86.44	359.29	9924.28	4615.93	4618.83	104.56	4620.01	1.30	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	20.000	Act Stns	30.000	30.000	SLB_NSG+MSHOT-Depth Only	Original Borehole / Cimarex Forty Niner Ridge 23 Federal #1H Gyro 0ft to 11268ft MD
	20.000	9428.000	Act Stns	30.000	30.000	SLB_NSG+MSHOT	Original Borehole / Cimarex Forty Niner Ridge 23 Federal #1H Gyro
	9428.000	9469.000	Act Stns	30.000	30.000	SLB_MWD-INC_ONLY	ST01 / Cimarex Forty Niner Ridge 23 Federal #1H ST01 MWD
	9469.000	10293.000	Act Stns	30.000	30.000	SLB_MWD-STD	ST01 / Cimarex Forty Niner Ridge 23 Federal #1H ST01 MWD
	10293.000	14284.000	Act Stns	30.000	30.000	SLB_MWD-STD	ST02 / Cimarex Forty Niner Ridge 23 Federal #1H ST02 Gyro+MWD
	14284.000	14343.000	Act Stns	30.000	30.000	SLB_BLIND+TREND	ST02 / Cimarex Forty Niner Ridge 23 Federal #1H ST02 Gyro+MWD