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page for directional survey

30-015- 42166

Schlumberger

Cimarex Hornsby 35 Federal Com 4H MWD Final Survey Geodetic Report



(Def Survey)

Report Date: May 08, 2017 - 01:33 PM
Client: Cimarex
Field: NM Eddy County (NAD 83)
Structure / Slot: Cimarex Hornsby 35 Federal Com 4H / Cimarex Hornsby 35 Federal Com 4H
Well: Cimarex Hornsby 35 Federal Com 4H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Hornsby 35 Federal Com 4H MWD Final
Survey Date: April 05, 2017
Tort / AHD / DDI / ERD Ratio: 247.869' / 7377.863 ft / 6.534 / 0.950
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 0' 2.86799", W 104° 9' 44.70074"
Location Grid N/E Y/X: N 364071.210 ftUS, E 594319.140 ftUS
CRS Grid Convergence Angle: 0.0906 °
Grid Scale Factor: 0.99991231
Version / Patch: 2.10.254.0
Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 356.162 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: KB
TVD Reference Elevation: 3284.100 ft above MSL
Seabed / Ground Elevation: 3260.100 ft above MSL
Magnetic Declination: 7.342 °
Total Gravity Field Strength: 998.4258mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 48001.299 nT
Magnetic Dip Angle: 59.709 °
Declination Date: April 05, 2017
Magnetic Declination Model: HDGM 2016
North Reference: Grid North
Grid Convergence Used: 0.0906 °
Total Corr Mag North->Grid North: 7.2515 °
Local Coord Referenced To: Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL [290' FSL, 2110' FWL]	0.00	0.00	288.50	0.00	0.00	0.00	0.00	N/A	364071.21	594319.14	N 32 0 2.87	W 104 9 44.70
	112.00	1.72	137.42	111.98	-1.31	-1.24	1.14	1.54	364069.97	594320.28	N 32 0 2.86	W 104 9 44.69
	163.00	2.03	128.70	162.96	-2.52	-2.37	2.36	0.82	364068.84	594321.50	N 32 0 2.84	W 104 9 44.87
	227.00	2.30	132.31	226.91	-4.21	-3.94	4.19	0.47	364067.27	594323.33	N 32 0 2.83	W 104 9 44.85
	258.00	2.30	132.31	257.89	-5.11	-4.78	5.11	0.00	364068.43	594324.25	N 32 0 2.82	W 104 9 44.84
	288.00	2.52	135.84	287.86	-6.05	-5.66	6.02	0.88	364065.56	594325.16	N 32 0 2.81	W 104 9 44.83
	318.00	2.61	138.04	317.83	-7.09	-6.64	6.94	0.44	364064.57	594326.07	N 32 0 2.80	W 104 9 44.82
	334.00	2.70	137.42	333.81	-7.87	-7.18	7.43	0.59	364064.03	594326.57	N 32 0 2.80	W 104 9 44.81
	472.00	2.83	130.50	471.85	-12.58	-11.79	12.22	0.26	364059.42	594331.36	N 32 0 2.75	W 104 9 44.56
	561.00	1.50	125.39	560.59	-14.85	-13.89	14.84	1.51	364057.32	594333.98	N 32 0 2.73	W 104 9 44.53
	652.00	0.62	297.08	651.58	-15.35	-14.36	15.38	2.32	364058.85	594334.52	N 32 0 2.73	W 104 9 44.52
	743.00	2.03	299.59	742.55	-14.21	-13.34	13.54	1.55	364057.87	594332.68	N 32 0 2.74	W 104 9 44.54
	834.00	1.90	293.77	833.50	-12.63	-11.93	10.75	0.26	364059.28	594329.89	N 32 0 2.75	W 104 9 44.58
	939.00	1.90	289.76	938.44	-11.12	-10.64	7.52	0.13	364060.57	594328.68	N 32 0 2.76	W 104 9 44.61
	1028.00	2.12	287.47	1027.39	-9.93	-9.65	4.56	0.26	364061.56	594323.70	N 32 0 2.77	W 104 9 44.65
	1123.00	2.43	293.77	1122.31	-8.36	-8.31	1.05	0.42	364062.90	594320.19	N 32 0 2.79	W 104 9 44.69
	1219.00	2.52	284.04	1218.22	-6.77	-6.98	-2.88	0.45	364064.23	594316.28	N 32 0 2.80	W 104 9 44.73
	1314.00	2.21	283.48	1313.14	-5.59	-6.06	-6.67	0.33	364065.16	594312.47	N 32 0 2.81	W 104 9 44.78
	1408.00	2.61	284.15	1407.06	-4.39	-5.10	-10.51	0.43	364066.11	594308.63	N 32 0 2.82	W 104 9 44.82
	1502.00	2.70	276.81	1500.96	-3.32	-4.32	-14.78	0.37	364066.90	594304.36	N 32 0 2.83	W 104 9 44.87
	1596.00	2.61	272.62	1594.86	-2.67	-3.95	-19.12	0.23	364067.26	594300.02	N 32 0 2.83	W 104 9 44.92
	1690.00	1.72	270.51	1688.79	-2.32	-3.84	-22.67	0.95	364067.37	594296.47	N 32 0 2.83	W 104 9 44.96
	1783.00	1.41	258.76	1781.75	-2.36	-4.05	-25.19	0.48	364067.16	594293.96	N 32 0 2.83	W 104 9 44.99
	1881.00	1.02	245.04	1879.73	-2.83	-4.68	-27.16	0.49	364066.55	594291.01	N 32 0 2.82	W 104 9 45.02
	1974.00	0.49	223.66	1972.72	-3.40	-5.29	-28.19	0.64	364065.92	594290.96	N 32 0 2.82	W 104 9 45.03
	2068.00	0.71	145.66	2066.72	-4.17	-6.07	-28.13	0.82	364065.14	594291.01	N 32 0 2.81	W 104 9 45.03
	2263.00	1.10	143.86	2261.69	-6.79	-8.58	-26.35	0.20	364062.64	594292.79	N 32 0 2.78	W 104 9 45.01
	2357.00	0.90	140.33	2355.68	-8.15	-9.87	-25.35	0.22	364061.34	594293.80	N 32 0 2.77	W 104 9 45.00
	2452.00	1.19	144.34	2450.66	-9.60	-11.25	-24.29	0.31	364059.96	594294.85	N 32 0 2.76	W 104 9 44.98
	2546.00	1.10	188.28	2544.65	-11.31	-12.93	-23.85	0.92	364058.28	594295.29	N 32 0 2.74	W 104 9 44.98
	2641.00	1.81	212.34	2639.62	-13.41	-15.10	-24.79	0.97	364056.11	594294.35	N 32 0 2.72	W 104 9 44.99
	2735.00	3.00	222.69	2733.53	-16.30	-18.17	-27.25	1.34	364053.05	594291.89	N 32 0 2.69	W 104 9 45.02
	2830.00	4.02	230.49	2828.35	-19.95	-22.11	-31.51	1.18	364049.10	594287.64	N 32 0 2.65	W 104 9 45.07
	2924.00	4.42	246.38	2922.10	-23.10	-25.66	-37.37	1.31	364045.55	594281.78	N 32 0 2.61	W 104 9 45.14
	3015.00	5.04	256.58	3012.79	-24.96	-28.00	-44.47	1.15	364043.22	594274.68	N 32 0 2.59	W 104 9 45.22
	3108.00	4.64	254.07	3105.46	-26.42	-29.98	-52.06	0.49	364041.24	594267.09	N 32 0 2.57	W 104 9 45.31
	3204.00	4.24	258.78	3201.17	-27.89	-31.73	-59.27	0.56	364039.48	594259.87	N 32 0 2.55	W 104 9 45.39
	3298.00	4.24	255.57	3294.92	-28.78	-33.27	-66.05	0.25	364037.94	594253.10	N 32 0 2.54	W 104 9 45.47
	3393.00	4.64	254.07	3389.63	-30.23	-35.20	-73.14	0.44	364036.01	594246.00	N 32 0 2.52	W 104 9 45.55
	3487.00	4.95	256.87	3483.30	-31.69	-37.18	-80.74	0.40	364034.03	594238.40	N 32 0 2.50	W 104 9 45.64
	3582.00	4.82	258.08	3577.96	-32.93	-38.95	-88.64	0.19	364032.26	594230.51	N 32 0 2.48	W 104 9 45.73
	3678.00	4.73	252.44	3673.62	-34.44	-40.98	-96.36	0.50	364030.23	594222.79	N 32 0 2.46	W 104 9 45.82
	3771.00	4.82	254.55	3766.30	-36.13	-43.18	-103.78	0.21	364028.04	594215.37	N 32 0 2.44	W 104 9 45.91
	3865.00	4.82	249.53	3859.97	-38.06	-45.61	-111.29	0.45	364025.60	594207.96	N 32 0 2.42	W 104 9 45.99
	3960.00	5.13	251.65	3954.61	-40.27	-48.34	-119.06	0.38	364022.87	594200.09	N 32 0 2.39	W 104 9 46.08
	4054.00	5.44	250.63	4048.21	-42.51	-51.14	-127.25	0.34	364020.07	594191.90	N 32 0 2.36	W 104 9 46.18
	4149.00	5.35	250.37	4142.79	-44.92	-54.12	-135.67	0.10	364017.09	594183.48	N 32 0 2.33	W 104 9 46.28
	4243.00	5.21	251.65	4236.39	-47.18	-56.94	-143.85	0.19	364014.27	594175.31	N 32 0 2.31	W 104 9 46.37
	4337.00	5.44	246.62	4329.99	-49.74	-60.05	-151.99	0.55	364011.16	594167.17	N 32 0 2.28	W 104 9 46.47
	4431.00	5.44	244.42	4423.56	-52.89	-63.74	-160.10	0.22	364007.47	594159.06	N 32 0 2.24	W 104 9 46.56
	4526.00	5.23	253.85	4518.15	-55.48	-66.69	-168.32	0.95	364004.32	594150.84	N 32 0 2.21	W 104 9 46.66
	4620.00	4.95	250.15	4611.78	-57.51	-69.46	-176.25	0.46	364001.75	594142.91	N 32 0 2.18	W 104 9 46.75
	4714.00	4.73	248.87	4705.45	-59.78	-72.24	-183.68	0.26	363998.98	594135.48	N 32 0 2.16	W 104 9 46.83
	4809.00	4.64	259.49	4800.13	-61.39	-74.35	-191.11	0.92	363996.87	594128.05	N 32 0 2.14	W 104 9 46.92
	4902.00	4.24	256.89	4892.85	-62.38	-75.82	-198.16	0.48	363995.40	594121.00	N 32 0 2.12	W 104 9 47.00
	4997.00	4.11	257.46	4987.60	-63.46	-77.35	-204.90	0.14	363993.87	594114.26	N 32 0 2.11	W 104 9 47.08
	5091.00	4.82	250.06	5081.32	-65.07	-79.43	-211.90	0.97	363991.79	594107.26	N 32 0 2.09	W 104 9 47.16
	5185.00	4.42	246.23	5175.01	-67.40	-82.24	-218.93	0.54	363988.98	594100.23	N 32 0 2.06	W 104 9 47.24
	5278.00	4.73	252.17	5267.71	-69.55	-84.85	-225.86	0.61	363986.36	594093.30	N 32 0 2.03	W 104 9 47.33
	5374.00	4.51	249.44	5363.40	-71.59	-87.39	-233.16	0.32	363983.83	594086.00	N 32 0 2.01	W 104 9 47.41
	5470.00	5.52	249.53	5459.03	-74.00	-90.33	-241.02	1.05	363980.89	594078.14	N 32 0 1.98	W 104 9 47.50
	5564.00	5.74	249.75	5552.58	-76.62	-93.54	-249.66	0.24	363977.68	594069.50	N 32 0 1.95	W 104 9 47.60
	5658.00	5.13	246.23	5646.16	-79.38	-96.86	-257.92	0.74	363974.36	594061.24	N 32 0 1.91	W 104 9 47.70
	5754.00	4.42	246.45	5741.82	-82.09	-100.07	-265.24	0.74	363971.15	594053.92	N 32 0 1.88	W 104 9 47.78
	5846.00	4.82	247.15	5833.52	-84.55	-102.99	-272.05	0.44	363968.23	594047.11	N 32 0 1.85	W 104 9 47.86
	5941.00	4.42	242.61	5928.22	-87.31	-106.22	-278.98	0.57	363965.00	594040.18	N 32 0 1.82	W 104 9 47.94
	6034.00	4.64	241.25	6020.93	-90.33	-109.68	-285.46	0.26	363961.54	594033.71	N 32 0 1.79	W 104 9 48.02
	6129.00	3.40	239.53	6115.69	-93.21	-112.96	-291.26	1.31	363958.26	594027.91	N 32 0 1.75	W 104 9 48.08
	6223.00	3.31	240.72	6209.53	-95.62	-115.70	-296.03	0.12	363955.52	594023.14	N 32 0 1.73	W 104 9 48.14
	6319.00	3.00	250.94	6305.38	-97.47	-117.87	-300.82	0.67	363953.35	594018.35	N 32 0 1.71	W 104 9 48.20
	6413.00	2.30	244.42	6399.28	-98.82	-119.49	-304.84	0.81	363951.73	594014.32	N 32 0 1.69	W 104 9 48.24
	6507.00	2.21	235.69	6493.21	-100.43	-121.33	-308.04	0.36	363949.90	594011.12	N 32 0 1.67	W 104 9 48.28
	6601.00	3.00	224.59	6587.11	-102.99	-124.10	-311.27	0.89	363947.12	594007.90	N 32 0 1.64	W 104 9 48.32
	6695.00	3.40	217.58	6680.97	-106.71	-128.06	-314.69	0.59	363944.16	594004.47	N 32 0 1.61	W 104 9 48.36
	6790.00	2.70	206.74	6775.83	-110.75	-132						

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	6978.00	2.43	213.75	6663.67	-117.54	-139.32	-320.79	0.62	363931.90	593998.38	N 32 0 1.49 W 104 9 48.43	
	7074.00	3.71	222.78	7059.53	-121.28	-143.29	-324.03	1.42	363927.93	593995.14	N 32 0 1.46 W 104 9 48.47	
	7170.00	4.64	239.84	7155.28	-125.14	-147.53	-329.49	1.61	363923.70	593989.68	N 32 0 1.41 W 104 9 48.53	
	7199.00	4.51	236.87	7184.19	-126.22	-148.74	-331.46	0.93	363922.49	593987.71	N 32 0 1.40 W 104 9 48.55	
	7262.00	3.95	256.82	7247.02	-127.78	-150.59	-335.65	2.48	363920.64	593983.52	N 32 0 1.38 W 104 9 48.60	
	7294.00	5.56	302.31	7278.92	-127.05	-150.01	-338.03	12.38	363921.21	593981.14	N 32 0 1.39 W 104 9 48.63	
	7325.00	9.31	321.54	7309.66	-124.09	-147.24	-340.86	14.36	363923.98	593978.31	N 32 0 1.42 W 104 9 48.66	
	7357.00	13.69	326.41	7341.01	-118.67	-142.06	-344.57	14.01	363929.17	593974.60	N 32 0 1.47 W 104 9 48.70	
	7388.00	17.44	331.12	7370.87	-111.28	-134.93	-348.85	12.76	363936.29	593970.33	N 32 0 1.54 W 104 9 48.75	
	7420.00	20.69	334.33	7401.11	-101.68	-125.63	-353.61	10.67	363945.59	593965.56	N 32 0 1.63 W 104 9 48.81	
	7451.00	23.37	338.61	7429.84	-90.73	-114.97	-358.23	10.07	363956.25	593960.94	N 32 0 1.74 W 104 9 48.86	
	7482.00	26.75	342.31	7457.92	-78.09	-102.60	-362.59	12.01	363968.62	593956.58	N 32 0 1.86 W 104 9 48.91	
	7514.00	29.78	346.25	7486.11	-63.27	-88.01	-366.67	11.12	363983.21	593952.50	N 32 0 2.00 W 104 9 48.96	
	7545.00	31.74	348.50	7512.74	-47.60	-72.54	-370.13	7.33	363998.68	593949.05	N 32 0 2.16 W 104 9 49.00	
	7577.00	34.21	348.77	7539.59	-30.34	-55.47	-373.56	7.73	364015.75	593945.82	N 32 0 2.32 W 104 9 49.04	
	7608.00	38.66	349.51	7564.52	-12.07	-37.39	-377.02	14.42	364033.83	593942.16	N 32 0 2.50 W 104 9 49.08	
	7640.00	42.52	349.51	7588.82	8.61	-16.92	-380.81	12.08	364054.29	593938.37	N 32 0 2.71 W 104 9 49.12	
	7671.00	45.66	349.27	7611.08	30.02	4.28	-384.78	10.14	364075.49	593934.39	N 32 0 2.92 W 104 9 49.17	
	7703.00	49.08	349.01	7632.75	53.39	27.40	-389.22	10.70	364098.80	593929.96	N 32 0 3.15 W 104 9 49.22	
First Taken Point	7720.00	50.86	349.68	7643.68	66.31	40.19	-391.62	10.87	364111.39	593927.55	N 32 0 3.27 W 104 9 49.25	
	7734.00	52.32	350.21	7652.38	77.22	50.99	-393.54	10.87	364122.19	593925.84	N 32 0 3.38 W 104 9 49.27	
	7768.00	55.42	351.61	7671.25	102.95	76.51	-397.61	10.31	364147.71	593921.56	N 32 0 3.63 W 104 9 49.32	
	7797.00	59.03	355.20	7688.03	128.87	102.39	-400.59	15.18	364173.59	593918.59	N 32 0 3.89 W 104 9 49.35	
	7829.00	62.71	357.54	7703.61	156.92	130.28	-402.35	13.15	364201.48	593916.83	N 32 0 4.16 W 104 9 49.37	
	7860.00	65.43	359.24	7717.16	184.77	158.14	-403.13	10.06	364229.34	593916.05	N 32 0 4.44 W 104 9 49.38	
	7892.00	69.27	359.78	7729.48	214.25	187.67	-403.38	12.10	364258.86	593915.80	N 32 0 4.73 W 104 9 49.38	
	7923.00	73.27	0.47	7739.44	243.53	217.02	-403.31	13.07	364288.21	593915.87	N 32 0 5.02 W 104 9 49.38	
	7955.00	77.19	0.87	7747.59	274.37	247.96	-402.95	12.31	364319.14	593916.23	N 32 0 5.33 W 104 9 49.38	
	8049.00	88.14	1.49	7759.58	387.10	341.02	-401.02	11.67	364412.20	593918.15	N 32 0 6.25 W 104 9 49.35	
	8073.00	88.62	1.99	7760.25	390.98	365.00	-400.30	2.89	364438.18	593918.88	N 32 0 6.49 W 104 9 49.34	
	8168.00	89.28	1.77	7761.99	485.49	459.94	-397.18	0.73	364531.11	593922.00	N 32 0 7.43 W 104 9 49.30	
	8261.00	88.83	1.65	7763.53	578.04	552.88	-394.41	0.50	364624.04	593924.77	N 32 0 8.35 W 104 9 49.27	
	8356.00	93.68	359.37	7761.45	672.71	647.82	-393.56	5.64	364718.97	593925.62	N 32 0 9.28 W 104 9 49.28	
	8450.00	90.83	356.53	7757.75	766.57	741.67	-396.92	4.28	364812.81	593922.28	N 32 0 10.21 W 104 9 49.30	
	8545.00	90.17	355.27	7756.92	861.57	836.42	-403.71	1.50	364907.55	593915.48	N 32 0 11.15 W 104 9 49.37	
	8639.00	90.27	356.54	7756.56	955.56	930.18	-410.42	1.36	365001.30	593908.75	N 32 0 12.08 W 104 9 49.45	
	8734.00	90.31	358.91	7756.08	1050.52	1025.09	-414.20	2.50	365098.21	593904.98	N 32 0 13.02 W 104 9 49.49	
	8829.00	90.17	359.48	7755.68	1145.39	1210.08	-415.53	0.62	365191.19	593903.65	N 32 0 13.96 W 104 9 49.51	
	8923.00	90.31	359.16	7755.29	1239.24	1214.08	-416.65	0.37	365265.18	593902.53	N 32 0 14.89 W 104 9 49.52	
	9018.00	90.17	359.60	7754.89	1334.09	1309.07	-417.67	0.49	365380.16	593901.50	N 32 0 15.83 W 104 9 49.53	
	9112.00	90.34	359.45	7754.47	1427.93	1403.06	-418.45	0.24	365474.15	593900.72	N 32 0 16.76 W 104 9 49.53	
	9207.00	90.03	359.16	7754.16	1522.78	1498.06	-419.61	0.45	365569.13	593899.57	N 32 0 17.70 W 104 9 49.55	
	9301.00	90.07	358.87	7754.08	1618.67	1592.04	-421.22	0.31	365663.11	593897.96	N 32 0 18.63 W 104 9 49.58	
	9395.00	90.24	0.05	7753.83	1710.51	1686.04	-422.11	1.27	365757.10	593897.07	N 32 0 19.58 W 104 9 49.57	
	9490.00	90.00	0.39	7753.63	1805.27	1781.04	-421.74	0.44	365852.09	593897.44	N 32 0 20.50 W 104 9 49.57	
	9584.00	90.14	0.44	7753.51	1899.01	1875.03	-421.06	0.18	365946.08	593898.12	N 32 0 21.43 W 104 9 49.58	
	9678.00	90.21	2.08	7753.23	1992.64	1969.01	-418.99	1.75	366040.04	593900.18	N 32 0 22.36 W 104 9 49.53	
	9773.00	89.93	3.48	7753.11	2088.01	2062.89	-414.44	1.52	366133.92	593904.74	N 32 0 23.29 W 104 9 49.48	
	9867.00	90.21	1.07	7753.00	2180.46	2157.81	-410.66	2.55	366228.83	593908.51	N 32 0 24.23 W 104 9 49.43	
	9961.00	90.45	357.64	7752.45	2274.30	2251.79	-411.72	3.66	366322.80	593907.45	N 32 0 25.16 W 104 9 49.44	
	10056.00	90.10	358.37	7752.00	2369.25	2346.73	-415.03	0.85	366417.73	593904.15	N 32 0 26.10 W 104 9 49.48	
	10150.00	90.14	0.01	7751.80	2463.11	2440.72	-416.36	1.75	366511.71	593902.82	N 32 0 27.03 W 104 9 49.49	
	10245.00	90.00	0.09	7751.68	2557.89	2535.72	-416.28	0.17	366606.70	593902.90	N 32 0 27.97 W 104 9 49.49	
	10339.00	90.31	357.98	7751.43	2651.77	2629.70	-417.86	2.27	366700.67	593901.32	N 32 0 28.90 W 104 9 49.51	
	10434.00	90.14	356.93	7751.06	2746.74	2724.60	-422.08	1.12	366795.57	593897.10	N 32 0 29.84 W 104 9 49.55	
	10528.00	90.34	356.14	7750.66	2840.74	2818.43	-427.76	0.87	366889.39	593891.42	N 32 0 30.76 W 104 9 49.62	
	10622.00	90.28	357.16	7750.15	2934.73	2912.27	-433.25	1.09	366983.21	593885.93	N 32 0 31.69 W 104 9 49.68	
	10717.00	90.45	359.31	7749.55	3029.66	3007.21	-436.18	2.27	367078.15	593883.00	N 32 0 32.63 W 104 9 49.71	
	10811.00	90.72	0.20	7748.59	3123.47	3101.21	-436.58	0.99	367172.14	593882.60	N 32 0 33.56 W 104 9 49.71	
	10905.00	90.45	0.13	7747.83	3217.24	3195.20	-436.31	0.30	367266.12	593882.87	N 32 0 34.49 W 104 9 49.71	
	10999.00	90.62	0.79	7746.75	3310.97	3289.19	-435.55	0.73	367360.11	593883.63	N 32 0 35.42 W 104 9 49.70	
	11094.00	91.41	1.14	7745.07	3405.62	3384.16	-433.95	0.91	367455.07	593885.23	N 32 0 36.36 W 104 9 49.68	
	11188.00	91.20	0.66	7742.93	3499.28	3478.13	-432.48	0.56	367549.03	593886.70	N 32 0 37.29 W 104 9 49.66	
	11282.00	90.93	1.11	7741.18	3592.94	3572.10	-431.03	0.56	367642.99	593888.15	N 32 0 38.22 W 104 9 49.64	
	11376.00	91.51	2.01	7739.18	3686.50	3666.04	-428.47	1.14	367736.92	593890.71	N 32 0 39.15 W 104 9 49.61	
	11471.00	91.89	2.17	7736.53	3780.96	3760.94	-425.00	0.25	367831.82	593894.17	N 32 0 40.09 W 104 9 49.57	
	11566.00	92.27	1.05	7733.25	3875.47	3855.85	-422.34	1.33	367926.71	593896.84	N 32 0 41.03 W 104 9 49.53	
	11660.00	91.79	0.41	7729.92	3969.11	3949.78	-421.14	0.85	368020.63	593898.04	N 32 0 41.96 W 104 9 49.52	
	11755.00	91.79	359.42	7726.95	4063.86	4044.73	-421.28	1.04	368115.58	593897.90	N 32 0 42.90 W 104 9 49.52	
	11849.00	92.78	358.76	7723.20	4157.66	4138.64	-422.77	1.27	368209.48	593896.41	N 32 0 43.83 W 104 9 49.53	
	11944.00	92.82	358.05	7718.56	4252.47	4233.49	-425.41	0.75	368304.32	593893.76	N 32 0 44.77 W 104 9 49.56	
	12038.00	92.66	357.53	7714.05	4346.33	4327.31	-429.03	0.57	368398.14	593890.14	N 32 0 45.70 W 104 9 49.60	
	12133.00	92.92	357.23	7709.41	4441.19	4422.10	-433.37	0.40	368492.91	593885.81	N 32 0 46.63 W 104 9 49.65	
	12227.00	92.41	356.87	7705.04	4535.06	4515.87	-438.20	0.86	368586.68	593880.98	N 32 0 47.56 W 104 9 49.71	
	12322.00	92.00	357.43	7701.38	4629.89	4610.69	-442.92	0.73	368681.48	593876.26	N 32 0 48.50 W 104 9 49.76	
	12416.00	91.24	357.05	7698.73	4723.84	4704.54	-447.45	0.90	368775.33	593871.73	N 32 0 49.43 W 104 9 49.81	
	12511.00	89.83	356.70	7697.84	4818.92	4799.39	-452.63	1.53	368870.17	593866.55	N 32 0 50.37 W 104 9 49.87	
	12606.00	87.87	357.51	7699.74	4913.89	4894.24	-457.42	2.23				

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS ("/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
Survey Program:												
Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type		Borehole / Survey			
	1	0.000	24.000	1/98.425	30.000	30.000	NAL_MWD_PLUS_0.5_DEG- Depth Only		Original Borehole / Cimarex Hornsby 35 Federal Com 4H MWD Final			
	1	24.000	24.000	Act Stns	30.000	30.000	NAL_MWD_PLUS_0.5_DEG- Depth Only		Original Borehole / Cimarex Hornsby 35 Federal Com 4H MWD Final			
	1	24.000	14502.000	Act Stns	30.000	30.000	NAL_MWD_PLUS_0.5_DEG		Original Borehole / Cimarex Hornsby 35 Federal Com 4H MWD			

Schlumberger

Cimarex

Final PVA

CIMAREX

CONTROLLED

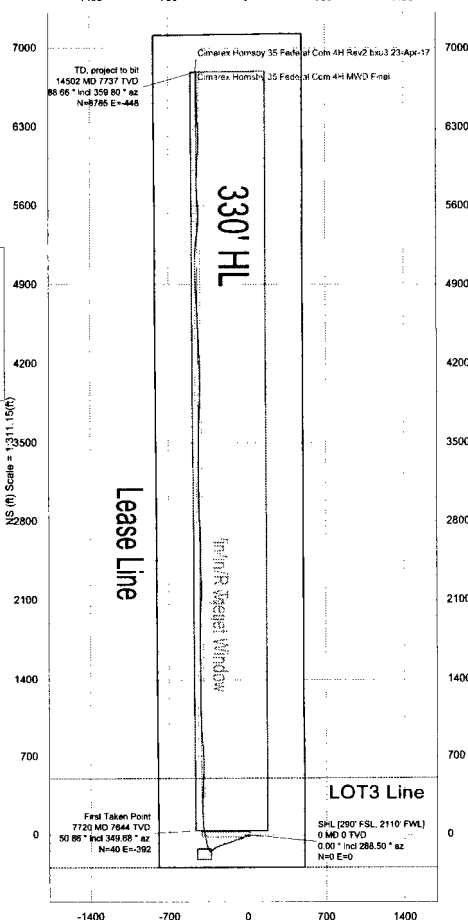
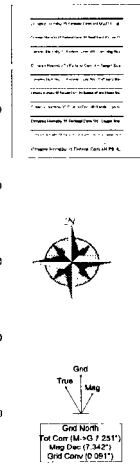
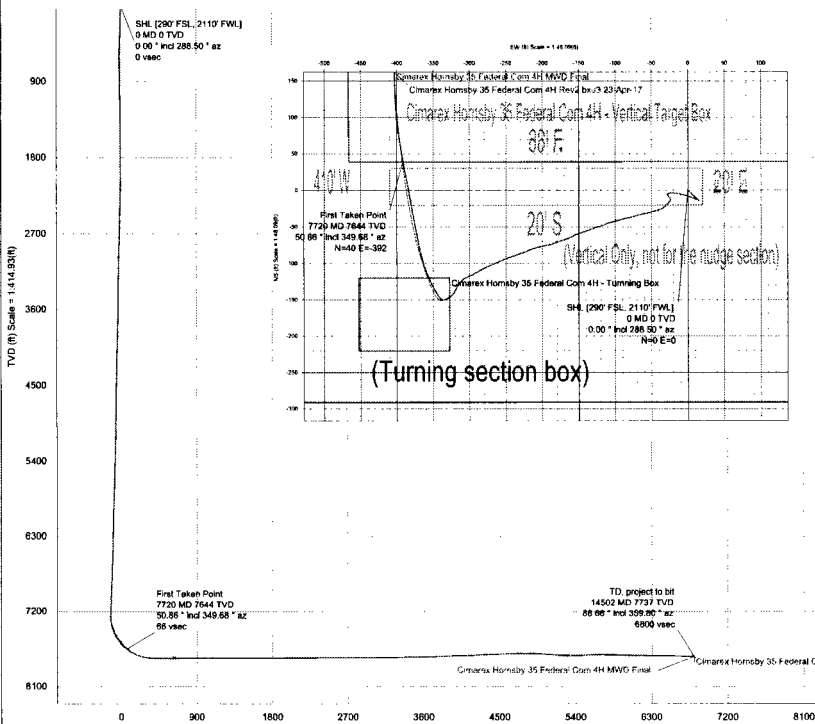
Borehole: Original Borehole Well: Cimarex Hornsby 35 Federal Com 4H Field: NM Eddy County (NAD 83) Structure: Cimarex Hornsby 35 Federal Com 4H

Geology & Magnetic Parameters: Model: H00M 2015 Dip: 26.78° Date: 01-Apr-2017 Surface Location: RAD33 New Mexico State Plane, Eastern Zone, US Feet. Lat: N 32 12 E 2.87 Easting: 364817.1865 Grid Conv: 9.8980" Scale Feet: 9.8980(1231) Well: Cimarex Hornsby 35 Federal Com 4H Well: Cimarex Hornsby 35 Federal Com 4H TVD Ref: 150338.10 above MSL Plan: Cimarex Hornsby 35 Federal Com 4H MWD Final

Drawn by	Checked by
Drawn date	Checked date
Drawn number	Checked number
Drawn title	Checked title
Drawn scale	Checked scale
Drawn units	Checked units
Drawn notes	Checked notes

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL (290° FSL, 2110° FWL)	0.00	0.00	288.50	0.00	0.00	0.00	0.00	
First Taken Point	7720.00	50.86	349.68	7643.68	66.31	40.19	-391.62	10.87
TD, project to bit	14502.00	88.86	359.80	7738.84	6800.15	8785.39	-447.84	0.00



Vertical Section (ft) Azim = 356.162° Scale = 1:1414.93(ft) Origin = ONI-S, OE/W

EW (ft) Scale = 1:311.15(ft)