

Schlumberger

Cimarex Final PVA

CIMAREX

Borehole:

Original Borehole

Well:

Cimarex Grynberg 11 Fed 5H

Field:

NM Eddy County (NAD 83)

Structure:

Cimarex Grynberg 11 Fed 5H

Gravity & Magnetic Parameters	Date:	08-Nov-2015	UAD3 New Mexico State Plane, Eastern Zone, US Feet	Grid Contour:	0.0411'	Horizontal	Shalt:	TVD Ref:	PRB1310.7M Above MSL
Model: HOOD 2015	Dip: 59.88°		41463.77MUS	Scale Fact:	0.9999975	Cimarex Grynberg 11			
Magnetic: 7.334°	FS: 48973.81MT	Gravity FS: 999.43Mgals (0.80855 Gauss)	Morning: 062236.4MUS			Cimarex Grynberg 11 Fed 5H MWD Final			
			Eastings:						

Critical Points									
Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS	
True SHL [330° FSL, 331° FEL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
First take point	6730.00	12.56	283.32	6728.12	9.39	9.51	0.88	14.58	
TD project to bit	11719.00	91.03	358.80	7097.72	4639.18	4621.30	-407.07	0.00	

Cimarex Grynberg 11 Fed 5H MWD Final
Cimarex Grynberg 11 Fed 5H Rev0 LP 14-Oct-15
Cimarex Grynberg 11 Fed 5H Rev3 RM 09-Nov-16
Cimarex Grynberg 11 Fed 5H - 25' L/R Target Box
Cimarex Grynberg 11 Fed 5H - 330' Hardline
Cimarex Grynberg 11 Fed 5H - Lease

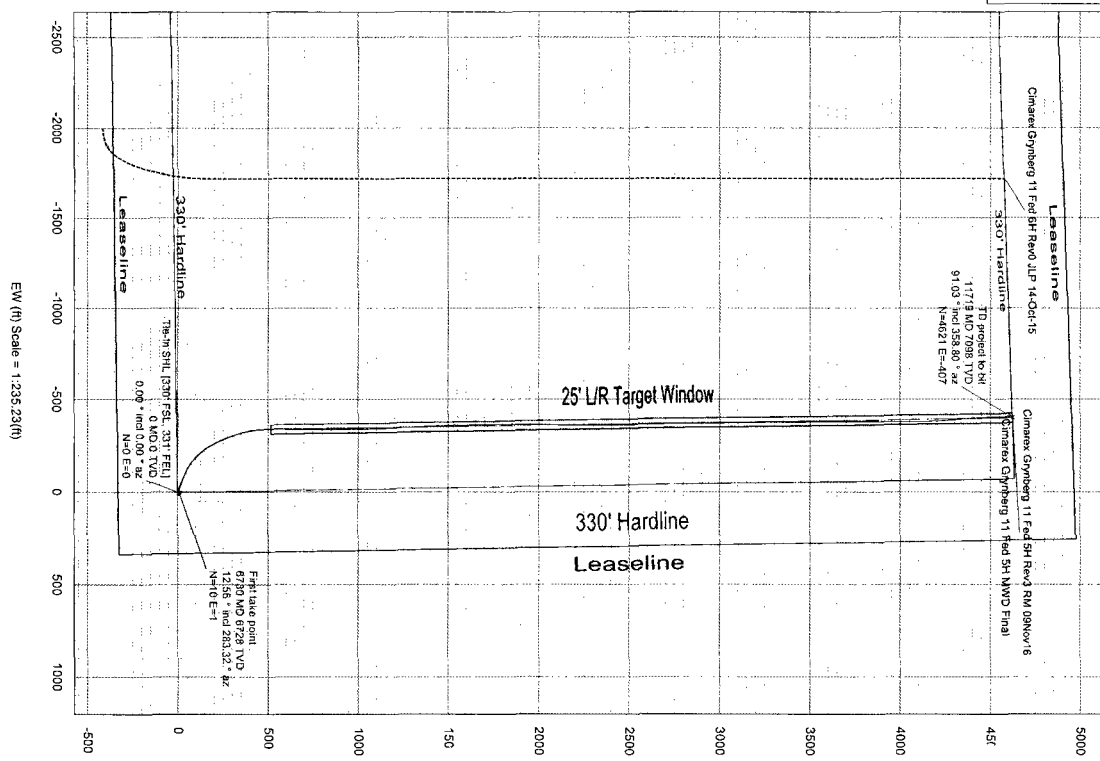
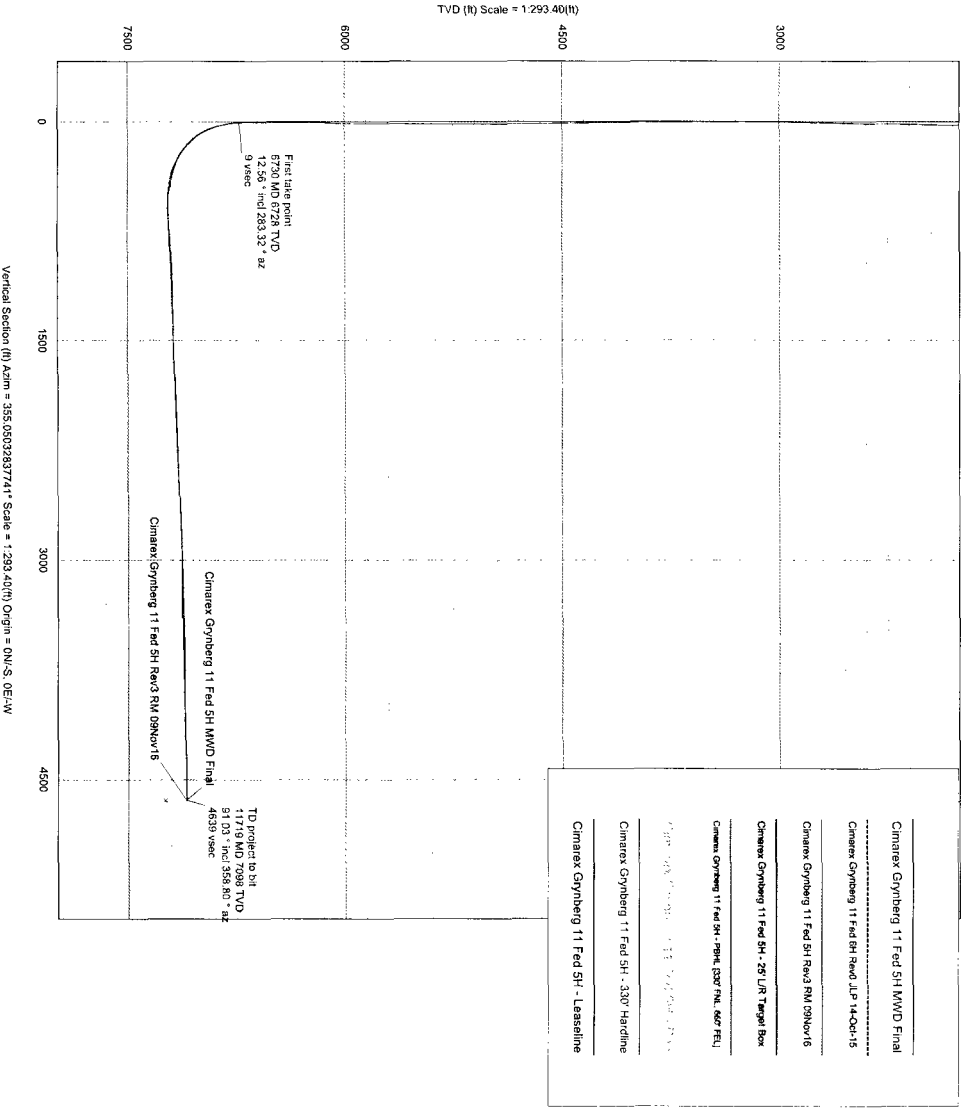
NS (ft) Scale = 1:235.23(ft)



Grid North
True
Mag

Tol Cor (N+G 7.493')
Mag Dec (7.534')
Grid Conv (0.0411')

CONTROLLED	
Drawn by	Checked by
Date	Date
Scale	Scale
Project	Project
Sheet	Sheet
Drawn by	Checked by
Date	Date
Scale	Scale
Project	Project
Sheet	Sheet



Cimarex Grynberg 11 Fed 5H MWD Final Survey Geodetic Report



NM OIL CONSERVATION
ARTESIA DISTRICT

MAR 17 2017

RECEIVED

(Def Survey)

Report Date: November 28, 2016 - 09:54 AM
Client: Cimarex
Field: NM Eddy County (NAD 83)
Structure / Slot: Cimarex Grynberg 11 Fed 5H / Cimarex Grynberg 11 Fed 5H
Well: Cimarex Grynberg 11 Fed 5H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Grynberg 11 Fed 5H MWD Final
Survey Date: November 09, 2016
Torq / AHD / DDI / EDR Ratio: 188.593 ° / 4891.272 ft / 6.175 / 0.677
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 8' 17.34579", W 104° 15' 22.03522"
Location Grid N/E Y/X: N 414003.790 ftUS, E 565236.480 ftUS
CRS Grid Convergence Angle: 0.0411 °
Grid Scale Factor: 0.99990975
Version / Patch: 2.10.254.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 355.050 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 3310.700 ft above MSL
Seabed / Ground Elevation: 3286.700 ft above MSL
Magnetic Declination: 7.534 °
Total Gravity Field Strength: 998.4375mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 48079.819 nT
Magnetic Dip Angle: 59.888 °
Declination Date: November 09, 2016
Magnetic Declination Model: HDGM 2016
North Reference: Grid North
Grid Convergence Used: 0.0411 °
Total Corr Mag North->Grid: 7.4925 °
North:
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 ° ' ")
Tie-In SHL [330' FSL, 331' FEL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	414003.79	565236.48	N 32 8 17.35	W 104 15 22.04
	82.00	1.02	300.00	82.00	0.42	0.36	-0.63	1.24	414004.15	565235.85	N 32 8 17.35	W 104 15 22.04
	209.00	1.33	347.90	208.97	2.53	2.37	-1.92	0.78	414006.16	565234.56	N 32 8 17.37	W 104 15 22.06
	297.00	1.10	356.86	296.95	4.39	4.21	-2.18	0.34	414008.00	565234.30	N 32 8 17.39	W 104 15 22.06
	384.00	1.19	359.76	383.93	6.12	5.95	-2.23	0.12	414009.74	565234.25	N 32 8 17.40	W 104 15 22.06
	474.00	1.20	356.50	473.91	7.99	7.83	-2.29	0.08	414011.62	565234.19	N 32 8 17.42	W 104 15 22.06
	564.00	1.33	357.65	563.89	9.98	9.81	-2.39	0.15	414013.60	565234.09	N 32 8 17.44	W 104 15 22.06
	654.00	1.41	352.05	653.87	12.13	11.95	-2.59	0.17	414015.74	565233.89	N 32 8 17.46	W 104 15 22.07
	741.00	1.50	348.35	740.84	14.33	14.13	-2.97	0.15	414017.91	565233.51	N 32 8 17.49	W 104 15 22.07
	836.00	1.72	355.97	835.80	16.99	16.77	-3.32	0.32	414020.55	565233.16	N 32 8 17.51	W 104 15 22.07
	925.00	1.59	348.62	924.76	19.55	19.31	-3.65	0.28	414023.10	565232.83	N 32 8 17.54	W 104 15 22.08
	1019.00	1.81	356.15	1018.72	22.33	22.07	-4.01	0.33	414025.86	565232.47	N 32 8 17.56	W 104 15 22.08
	1210.00	2.03	348.75	1209.65	25.47	25.18	-4.44	0.35	414028.97	565232.04	N 32 8 17.60	W 104 15 22.09
	1303.00	0.62	74.78	1302.64	27.75	27.50	-4.16	0.58	414031.28	565232.32	N 32 8 17.62	W 104 15 22.08
	1397.00	0.80	89.10	1396.64	27.80	27.64	-3.01	0.27	414031.43	565233.47	N 32 8 17.62	W 104 15 22.07
	1489.00	1.50	76.98	1488.62	27.92	27.92	-1.20	0.80	414031.71	565235.28	N 32 8 17.62	W 104 15 22.05
	1583.00	0.80	135.07	1582.60	27.59	27.74	0.47	1.35	414031.52	565236.95	N 32 8 17.62	W 104 15 22.03
	1676.00	1.33	141.06	1675.59	26.20	26.44	1.60	0.58	414030.22	565238.08	N 32 8 17.61	W 104 15 22.02
	1776.00	0.49	165.03	1775.57	24.82	25.12	2.44	0.90	414028.91	565238.92	N 32 8 17.59	W 104 15 22.01
	1833.00	1.50	132.42	1832.56	24.03	24.38	3.06	1.96	414028.17	565239.54	N 32 8 17.59	W 104 15 22.00
	1971.00	1.19	131.85	1970.52	21.65	22.21	5.46	0.22	414025.99	565241.94	N 32 8 17.57	W 104 15 21.97
	2066.00	1.19	133.13	2065.50	20.20	20.87	6.91	0.03	414024.66	565243.39	N 32 8 17.55	W 104 15 21.95
	2161.00	1.33	126.12	2160.48	18.74	19.55	8.52	0.22	414023.34	565245.00	N 32 8 17.54	W 104 15 21.94
	2254.00	1.33	129.34	2253.46	17.28	18.23	10.23	0.08	414022.02	565246.71	N 32 8 17.53	W 104 15 21.92
	2348.00	1.20	129.70	2347.43	15.83	16.91	11.83	0.14	414020.70	565248.31	N 32 8 17.51	W 104 15 21.90
	2441.00	1.19	139.56	2440.41	14.35	15.55	13.21	0.22	414019.34	565249.69	N 32 8 17.50	W 104 15 21.88

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 ° ' ")
	2538.00	1.33	135.24	2537.39	12.67	13.99	14.65	0.17	414017.78	565251.13	N 32 8 17.48	W 104 15 21.86
	2631.00	1.41	140.04	2630.36	10.90	10.90	16.15	0.15	414016.13	565252.63	N 32 8 17.47	W 104 15 21.85
	2726.00	1.33	145.99	2725.34	8.98	10.53	17.51	0.17	414014.32	565253.99	N 32 8 17.45	W 104 15 21.83
	2820.00	1.41	142.56	2819.31	7.05	8.71	18.83	0.12	414012.50	565255.31	N 32 8 17.43	W 104 15 21.82
	2914.00	1.19	146.08	2913.29	5.22	6.98	20.08	0.25	414010.77	565256.55	N 32 8 17.41	W 104 15 21.80
	3008.00	1.72	237.61	3007.26	3.72	5.42	19.43	2.25	414009.21	565255.91	N 32 8 17.40	W 104 15 21.81
	3100.00	1.90	242.85	3099.22	2.51	3.98	16.91	0.27	414007.77	565253.38	N 32 8 17.39	W 104 15 21.84
	3195.00	1.80	246.40	3194.17	1.44	2.66	14.14	0.16	414006.45	565250.62	N 32 8 17.37	W 104 15 21.87
	3290.00	0.31	322.60	3289.15	1.17	2.27	12.61	1.84	414006.06	565249.09	N 32 8 17.37	W 104 15 21.89
	3386.00	0.40	331.50	3385.15	1.70	2.77	12.30	0.11	414006.56	565248.78	N 32 8 17.37	W 104 15 21.89
	3481.00	0.62	326.58	3480.15	2.46	3.49	11.86	0.24	414007.28	565248.33	N 32 8 17.38	W 104 15 21.90
	3576.00	0.49	323.37	3575.14	3.25	4.25	11.33	0.14	414008.04	565247.81	N 32 8 17.39	W 104 15 21.90
	3669.00	0.50	299.30	3668.14	3.82	4.77	10.74	0.22	414008.56	565247.22	N 32 8 17.39	W 104 15 21.91
	3762.00	0.62	310.23	3761.13	4.41	5.29	10.00	0.17	414009.08	565246.48	N 32 8 17.40	W 104 15 21.92
	3858.00	0.49	308.43	3857.13	5.06	5.88	9.28	0.14	414009.67	565245.76	N 32 8 17.40	W 104 15 21.93
	3952.00	0.49	332.80	3951.13	5.71	6.49	8.78	0.22	414010.28	565245.26	N 32 8 17.41	W 104 15 21.90
	4046.00	0.71	333.19	4045.12	6.62	7.36	8.34	0.23	414011.15	565244.82	N 32 8 17.42	W 104 15 21.90
	4142.00	0.80	342.53	4141.11	7.82	8.53	7.87	0.16	414012.32	565244.35	N 32 8 17.43	W 104 15 21.94
	4236.00	0.80	344.21	4235.10	9.11	9.79	7.49	0.02	414013.58	565243.97	N 32 8 17.44	W 104 15 21.95
	4330.00	0.80	337.82	4329.09	10.38	11.03	7.07	0.09	414014.82	565243.55	N 32 8 17.45	W 104 15 21.95
	4425.00	0.71	349.45	4424.09	11.60	12.22	6.71	0.19	414016.01	565243.19	N 32 8 17.47	W 104 15 21.96
	4520.00	0.88	324.38	4519.08	12.81	13.40	6.18	0.40	414017.18	565242.65	N 32 8 17.48	W 104 15 21.96
	4615.00	0.62	355.27	4614.07	13.95	14.50	5.71	0.50	414018.29	565242.19	N 32 8 17.49	W 104 15 21.97
	4708.00	0.60	5.80	4707.06	14.94	15.49	5.72	0.12	414019.28	565242.20	N 32 8 17.50	W 104 15 21.97
	4803.00	0.49	27.94	4802.06	15.77	16.34	5.96	0.25	414020.13	565242.44	N 32 8 17.51	W 104 15 21.97
	4897.00	0.49	34.37	4896.06	16.41	17.03	6.37	0.06	414020.82	565242.85	N 32 8 17.51	W 104 15 21.96
	4990.00	0.50	63.76	4989.05	16.87	17.54	6.96	0.27	414021.32	565243.44	N 32 8 17.52	W 104 15 21.95
	5086.00	0.62	71.39	5085.05	17.14	17.89	7.83	0.15	414021.67	565244.31	N 32 8 17.52	W 104 15 21.94
	5180.00	0.71	79.58	5179.04	17.32	18.15	8.88	0.14	414021.94	565245.36	N 32 8 17.53	W 104 15 21.93
	5274.00	0.49	81.79	5273.04	17.40	18.32	9.85	0.24	414022.10	565246.33	N 32 8 17.53	W 104 15 21.92
	5368.00	0.49	116.78	5367.03	17.21	18.19	10.61	0.31	414021.98	565247.09	N 32 8 17.53	W 104 15 21.91
	5464.00	0.31	153.31	5463.03	16.75	17.78	11.09	0.32	414021.56	565247.57	N 32 8 17.52	W 104 15 21.91
	5559.00	0.40	137.50	5558.03	16.25	17.30	11.43	0.14	414021.09	565247.91	N 32 8 17.52	W 104 15 21.90
	5653.00	0.49	96.02	5652.03	15.91	17.02	12.05	0.35	414020.81	565248.53	N 32 8 17.51	W 104 15 21.89
	5747.00	0.31	34.15	5746.03	16.03	17.19	12.60	0.47	414020.97	565249.08	N 32 8 17.52	W 104 15 21.89
	5893.00	1.02	114.79	5892.02	15.70	16.97	14.00	0.70	414020.76	565250.48	N 32 8 17.51	W 104 15 21.87
	5938.00	1.50	110.17	5937.01	15.25	16.60	14.91	1.09	414020.39	565251.39	N 32 8 17.51	W 104 15 21.86
	6032.00	1.41	178.65	6030.98	13.57	15.02	16.10	1.74	414018.80	565252.58	N 32 8 17.49	W 104 15 21.85
	6126.00	1.72	193.81	6124.95	11.08	12.49	15.79	0.55	414016.28	565252.27	N 32 8 17.47	W 104 15 21.85
	6219.00	2.03	195.79	6217.90	8.22	9.55	15.01	0.34	414013.34	565251.48	N 32 8 17.44	W 104 15 21.86
	6314.00	0.62	264.89	6312.87	6.64	7.88	14.04	2.00	414011.67	565250.51	N 32 8 17.42	W 104 15 21.81
	6409.00	0.62	266.12	6407.87	6.65	7.80	13.01	0.01	414011.59	565249.49	N 32 8 17.42	W 104 15 21.88
	6503.00	0.60	258.30	6501.86	6.60	7.67	12.02	0.09	414011.46	565248.50	N 32 8 17.42	W 104 15 21.89
	6586.00	0.31	255.28	6584.86	6.51	7.52	11.38	0.35	414011.31	565247.86	N 32 8 17.42	W 104 15 21.90
	6614.00	0.18	202.10	6612.86	6.46	7.46	11.29	0.89	414011.25	565247.77	N 32 8 17.42	W 104 15 21.90
	6646.00	1.67	275.16	6644.85	6.50	7.46	10.81	5.08	414011.06	565247.29	N 32 8 17.42	W 104 15 21.91
	6677.00	5.51	281.06	6675.79	6.99	7.79	8.89	12.43	414011.58	565245.37	N 32 8 17.42	W 104 15 21.93
	6709.00	9.51	281.84	6707.51	8.18	8.62	4.80	12.50	414012.41	565241.28	N 32 8 17.43	W 104 15 21.98
	6756.00	16.34	284.40	6753.29	11.49	11.07	-5.42	14.58	414014.86	565231.06	N 32 8 17.46	W 104 15 22.10
	6803.00	22.32	287.35	6797.62	17.08	15.38	-20.35	12.89	414019.17	565216.13	N 32 8 17.50	W 104 15 22.27
	6850.00	27.44	288.75	6840.25	24.82	21.52	-39.14	10.96	414025.31	565197.34	N 32 8 17.56	W 104 15 22.49
	6897.00	33.52	289.18	6880.73	34.49	29.28	-61.67	12.94	414033.06	565174.81	N 32 8 17.64	W 104 15 22.75
	6945.00	39.77	291.28	6919.23	46.70	39.21	-88.52	13.28	414043.00	565147.96	N 32 8 17.73	W 104 15 23.06
	6992.00	42.12	297.65	6954.74	61.85	51.99	-116.51	10.19	414055.77	565119.98	N 32 8 17.86	W 104 15 23.39
	7039.00	44.26	303.66	6989.02	80.58	68.40	-144.14	9.86	414072.19	565092.36	N 32 8 18.02	W 104 15 23.71
	7086.00	46.46	310.31	7022.06	102.93	88.53	-170.80	11.10	414092.31	565065.70	N 32 8 18.22	W 104 15 24.02
	7133.00	49.67	316.83	7053.49	129.13	112.63	-196.07	12.37	414116.41	565040.43	N 32 8 18.46	W 104 15 24.31
	7180.00	51.99	322.85	7083.19	158.89	140.48	-219.52	11.09	414141.25	565016.98	N 32 8 18.74	W 104 15 24.59

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 ° ' ")
	7228.00	55.54	328.28	7111.57	192.59	172.41	-241.36	11.74	414176.18	564995.14	N 32 8 19.05	W 104 15 24.84
	7275.00	61.43	332.55	7136.13	229.00	207.25	-261.09	14.73	414211.02	564975.42	N 32 8 19.40	W 104 15 25.07
	7323.00	67.31	336.75	7156.90	269.55	246.34	-279.57	14.57	414250.11	564956.94	N 32 8 19.79	W 104 15 25.28
	7370.00	72.18	338.72	7173.16	311.63	287.14	-296.26	11.08	414290.90	564940.25	N 32 8 20.19	W 104 15 25.48
	7417.00	76.43	341.49	7185.88	355.34	329.68	-311.64	10.67	414333.44	564924.87	N 32 8 20.61	W 104 15 25.66
	7464.00	77.85	345.48	7196.34	400.22	373.60	-324.66	8.81	414377.35	564911.85	N 32 8 21.04	W 104 15 25.81
	7512.00	78.90	351.76	7206.02	446.91	419.66	-333.92	13.00	414423.42	564902.59	N 32 8 21.50	W 104 15 25.92
	7559.00	80.61	357.02	7214.39	493.14	465.68	-338.44	11.60	414469.42	564898.07	N 32 8 21.96	W 104 15 25.97
	7605.00	85.57	359.85	7219.92	538.71	511.31	-339.68	12.39	414515.05	564896.83	N 32 8 22.41	W 104 15 25.98
	7652.00	91.63	0.57	7221.07	585.48	558.27	-339.50	12.98	414562.01	564897.01	N 32 8 22.87	W 104 15 25.98
	7683.00	93.28	0.90	7219.74	616.30	589.24	-339.11	5.43	414592.97	564897.40	N 32 8 23.18	W 104 15 25.97
	7714.00	93.94	1.49	7217.79	647.06	620.17	-338.46	2.85	414623.90	564898.05	N 32 8 23.48	W 104 15 25.97
	7787.00	94.51	1.09	7212.41	719.43	692.95	-336.82	0.95	414696.68	564899.69	N 32 8 24.21	W 104 15 25.95
	7882.00	94.06	359.60	7205.31	813.76	787.68	-336.25	1.63	414791.40	564900.26	N 32 8 25.14	W 104 15 25.94
	7977.00	92.86	359.18	7199.58	908.31	882.50	-337.26	1.34	414886.21	564899.25	N 32 8 26.08	W 104 15 25.95
	8070.00	91.93	358.90	7195.69	1001.00	975.40	-338.82	1.04	414979.10	564897.69	N 32 8 27.00	W 104 15 25.97
	8165.00	91.38	358.43	7192.95	1095.77	1070.34	-341.03	0.78	415074.03	564895.48	N 32 8 27.94	W 104 15 25.97
	8259.00	91.31	357.70	7190.74	1189.62	1164.26	-344.21	0.78	415167.94	564892.31	N 32 8 28.87	W 104 15 26.03
	8353.00	91.14	357.54	7188.73	1283.50	1258.16	-348.11	0.25	415261.83	564888.40	N 32 8 29.80	W 104 15 26.07
	8447.00	91.10	356.89	7186.90	1377.41	1352.03	-352.67	0.89	415355.69	564883.84	N 32 8 30.73	W 104 15 26.13
	8540.00	91.27	357.31	7184.97	1470.33	1444.89	-357.38	0.49	415448.54	564879.13	N 32 8 31.65	W 104 15 26.18
	8635.00	91.55	358.86	7182.63	1565.17	1539.80	-360.55	1.66	415543.45	564875.96	N 32 8 32.59	W 104 15 26.22
	8728.00	92.03	359.05	7179.73	1657.91	1632.74	-362.25	0.56	415636.38	564874.27	N 32 8 33.50	W 104 15 26.23
	8823.00	91.89	358.37	7176.48	1752.66	1727.66	-364.39	0.73	415731.29	564872.13	N 32 8 34.44	W 104 15 26.26
	8917.00	91.79	0.06	7173.46	1846.36	1821.60	-365.67	1.80	415825.22	564870.84	N 32 8 35.37	W 104 15 26.27
	9012.00	91.82	1.17	7170.47	1940.86	1916.55	-364.65	1.17	415920.16	564871.86	N 32 8 36.31	W 104 15 26.26
	9107.00	92.37	0.94	7167.00	2035.28	2011.47	-362.90	0.63	416015.07	564873.61	N 32 8 37.25	W 104 15 26.24
	9202.00	92.55	0.61	7162.92	2129.72	2106.37	-361.62	0.40	416109.97	564874.89	N 32 8 38.19	W 104 15 26.22
	9296.00	92.72	0.23	7158.60	2223.20	2200.27	-360.93	0.44	416203.85	564875.58	N 32 8 39.12	W 104 15 26.21
	9390.00	92.55	359.86	7154.28	2316.75	2294.17	-360.86	0.43	416297.75	564875.65	N 32 8 40.05	W 104 15 26.21
	9483.00	92.58	359.53	7150.11	2409.35	2387.07	-361.35	0.36	416390.64	564875.16	N 32 8 40.97	W 104 15 26.22
	9577.00	92.51	358.80	7145.94	2503.01	2480.97	-362.72	0.78	416484.53	564873.79	N 32 8 41.90	W 104 15 26.23
	9671.00	92.58	358.76	7141.77	2596.72	2574.86	-364.72	0.09	416578.41	564871.79	N 32 8 42.83	W 104 15 26.26
	9766.00	92.55	358.75	7137.51	2691.43	2669.74	-366.78	0.35	416673.28	564869.73	N 32 8 43.77	W 104 15 26.28
	9859.00	92.24	358.65	7133.63	2784.16	2762.63	-368.89	0.35	416766.17	564867.62	N 32 8 44.69	W 104 15 26.30
	9953.00	91.34	359.63	7130.69	2877.87	2856.57	-370.30	1.42	416860.10	564866.21	N 32 8 45.61	W 104 15 26.32
	10048.00	90.83	359.31	7128.89	2972.57	2951.55	-371.18	0.63	416955.07	564865.33	N 32 8 46.55	W 104 15 26.33
	10142.00	90.62	358.96	7127.70	3066.33	3045.53	-372.60	0.43	417049.04	564863.92	N 32 8 47.48	W 104 15 26.34
	10236.00	90.14	358.87	7127.08	3160.11	3139.52	-374.38	0.52	417143.02	564862.14	N 32 8 48.41	W 104 15 26.36
	10330.00	90.21	359.44	7126.79	3253.87	3233.50	-375.77	0.61	417237.00	564860.75	N 32 8 49.34	W 104 15 26.37
	10424.00	90.83	0.31	7125.94	3347.53	3327.50	-375.97	1.14	417330.98	564860.54	N 32 8 50.27	W 104 15 26.37
	10519.00	91.20	359.41	7124.26	3442.18	3422.48	-376.20	1.02	417425.96	564860.31	N 32 8 51.21	W 104 15 26.38
	10613.00	91.41	358.49	7122.12	3535.94	3516.44	-377.92	1.00	417519.91	564858.59	N 32 8 52.14	W 104 15 26.40
	10706.00	91.58	358.89	7119.69	3628.72	3609.39	-380.05	0.47	417612.84	564856.47	N 32 8 53.06	W 104 15 26.43
	10799.00	91.82	0.05	7116.93	3721.40	3702.34	-380.91	1.27	417705.79	564855.61	N 32 8 53.98	W 104 15 26.43
	10894.00	91.62	0.22	7114.08	3815.98	3797.30	-380.69	0.28	417800.74	564855.83	N 32 8 54.92	W 104 15 26.43
	10988.00	91.44	0.40	7111.57	3909.55	3891.26	-380.18	0.27	417894.69	564856.34	N 32 8 55.85	W 104 15 26.42
	11083.00	91.17	359.88	7109.41	4004.15	3886.24	-379.95	0.62	417989.66	564856.57	N 32 8 56.79	W 104 15 26.42
	11177.00	91.20	359.87	7107.46	4097.80	4080.22	-380.15	0.03	418083.63	564856.36	N 32 8 57.72	W 104 15 26.42
	11273.00	91.17	357.61	7105.48	4193.57	4176.17	-382.26	2.35	418179.57	564854.25	N 32 8 58.67	W 104 15 26.45
	11367.00	91.07	355.62	7103.64	4287.52	4269.98	-387.81	2.12	418273.37	564848.71	N 32 8 59.60	W 104 15 26.51
	11462.00	91.03	355.09	7101.90	4382.50	4364.65	-395.50	0.56	418368.04	564841.01	N 32 9 0 54	W 104 15 26.60
	11555.00	90.76	356.86	7100.45	4475.47	4457.41	-402.03	1.93	418460.78	564834.49	N 32 9 1 46	W 104 15 26.67
	11650.00	91.03	358.80	7098.96	4570.34	4552.32	-405.63	2.06	418555.69	564830.89	N 32 9 2 40	W 104 15 26.72
	11719.00	91.03	358.80	7097.72	4639.18	4621.30	-407.07	0.00	418624.66	564829.45	N 32 9 3 08	W 104 15 26.73

TD project to bit

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 Type: Def Survey												

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

Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	1	0.000	24.000	1/98.425	30.000	NAL_MWD_PLUS_0.5_DEG- Depth Only	Original Borehole / Cimarex Grynberg 11 Fed 5H MWD Final
	1	24.000	24.000	Act Stns	30.000	NAL_MWD_PLUS_0.5_DEG- Depth Only	Original Borehole / Cimarex Grynberg 11 Fed 5H MWD Final
	1	24.000	11719.000	Act Stns	30.000	NAL_MWD_PLUS_0.5_DEG	Original Borehole / Cimarex Grynberg 11 Fed 5H MWD Final