

30 015 39141

Cimarex Energy

Eddy County, NM (NAD83 NME)

Gadwall "18" Federal Com #2H

Gadwall "18" Federal Com #2H (150' FNL & 2310' FWL)

OH - Job #32D1011961

Survey: MWD Survey

SDI Standard Survey Report

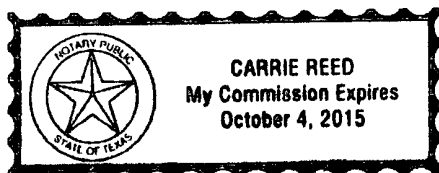
This survey is correct to the best of my knowledge and is supported by actual field data.

Ch. Arto

Notarized this date 16th of November, 2011.

Carrie Reed

Notary Signature
County of Midland
State of Texas





Scientific Drilling International, Inc.
SDI Standard Survey Report



Company:	Cimarex Energy	Local Co-ordinate Reference:	Site Gadwall "18" Federal Com #2H
Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	KB Elev (20') @ 3215 0usft (Key #880)
Site:	Gadwall "18" Federal Com #2H	MD Reference:	KB Elev (20') @ 3215 0usft (Key #880)
Well:	Gadwall "18" Federal Com #2H (150' FNL & 2310' FWL)	North Reference:	Grid
Wellbore:	OH - Job #32D1011961	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM-Regulatory

Project	Eddy County, NM (NAD83 NME)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Gadwall "18" Federal Com #2H		
Site Position:		Northing:	413,530 80 usft
From:	Map	Easting:	573,169 00 usft
Position Uncertainty:	0 0 usft	Slot Radius:	0"
		Latitude:	32° 8' 12 599 N
		Longitude:	104° 13' 49 779 W
		Grid Convergence:	0 05 °

Well	Gadwall "18" Federal Com #2H (150' FNL & 2310' FWL)		
Well Position	+N/-S	0 0 usft	Northing: 413,530 80 usft
	+E/-W	0 0 usft	Easting: 573,169 00 usft
Position Uncertainty	0 0 usft	Wellhead Elevation:	usft
		Latitude:	32° 8' 12 599 N
		Longitude:	104° 13' 49 779 W
		Ground Level:	3,195 0 usft

Wellbore	OH - Job #32D1011961		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2010	10/8/2011	7.84
			Dip Angle (°)
			59 98
			Field Strength (nT)
			48,459

Design	Actual		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0 0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0 0	0 0	0.0
			Direction (°)
			181 33

Survey Program	Date	11/15/2011		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
121 2	7,375 5	Gyro Survey (OH - Job #32D1011961)	Keeper	Standard Wireline Keeper ver 1 0 2
7,409 0	12,379 0	MWD Survey (OH - Job #32D1011961)	MWD	MWD - Standard

Survey							
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
0 0	0 00	0 00	0 0	0 0	0 0	0 00	0 0
121.2	0 25	186 80	121 2	-0 3	0 0	186 80	0 3
184 5	0 62	205 01	184.5	-0 7	-0 2	195 17	0 7
247 9	0 91	209 84	247.9	-1 5	-0 6	201 97	1 6
309 2	0 99	192 77	309 2	-2 4	-0 9	201 57	2 6
370 5	0 62	170 65	370 5	-3 2	-1 0	197 32	3 4
431 9	0 87	123 92	431 9	-3 8	-0 6	188 46	3 9
493 2	0 95	113 21	493 2	-4 3	0 3	176 22	4 3
556 6	0 66	117 01	556 6	-4 7	1 1	166 81	4 8
617 9	0 75	106 89	617 9	-4 9	1 8	160 07	5 3
679 2	0 72	98 47	679 1	-5 1	2 6	153 44	5 7



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Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	KB Elev (20') @ 3215 0usft (Key #880)
Site:	Gadwall "18" Federal Com #2H	MD Reference:	KB Elev (20') @ 3215 0usft (Key #880)
Well:	Gadwall "18" Federal Com #2H (150' FNL & 241' 0" FNL)	North Reference:	Grid
Wellbore:	241' 0" FNL #32D1011961	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM-Regulatory

Survey							
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
741.3	0.76	79.49	741.2	-5.1	3.3	146.70	6.1
804.9	0.68	76.77	804.8	-4.9	4.1	140.06	6.4
867.4	0.22	68.32	867.3	-4.8	4.6	136.22	6.6
928.0	0.04	30.20	927.9	-4.7	4.7	135.12	6.7
988.5	0.11	272.32	988.4	-4.7	4.7	135.29	6.6
1,050.1	0.26	276.19	1,050.0	-4.7	4.5	136.42	6.5
1,112.6	0.15	358.67	1,112.5	-4.6	4.3	136.75	6.3
1,173.2	1.10	69.60	1,173.1	-4.3	4.9	131.56	6.5
1,235.7	2.13	76.32	1,235.6	-3.8	6.6	120.31	7.6
1,297.3	2.61	79.72	1,297.2	-3.3	9.1	110.12	9.6
1,360.8	2.38	73.43	1,360.6	-2.7	11.7	102.87	12.0
1,421.4	2.89	69.86	1,421.1	-1.8	14.4	97.13	14.5
1,483.9	3.55	72.89	1,483.5	-0.7	17.7	92.22	17.7
1,545.5	3.94	75.13	1,545.0	0.4	21.6	88.89	21.6
1,606.0	4.19	81.92	1,605.3	1.3	25.8	87.20	25.8
1,668.6	4.59	85.07	1,667.8	1.8	30.5	86.63	30.6
1,732.1	4.80	85.92	1,731.1	2.2	35.7	86.47	35.8
1,796.7	3.82	85.47	1,795.5	2.6	40.6	86.38	40.6
1,859.2	2.99	85.75	1,857.9	2.9	44.3	86.31	44.4
1,923.8	2.38	82.94	1,922.4	3.1	47.3	86.20	47.4
1,986.3	1.88	80.03	1,984.8	3.5	49.6	85.98	49.7
2,049.9	1.56	81.78	2,048.4	3.8	51.5	85.79	51.6
2,113.4	1.44	80.12	2,111.9	4.0	53.1	85.64	53.3
2,177.0	1.25	79.25	2,175.5	4.3	54.6	85.48	54.7
2,239.5	1.08	81.20	2,238.0	4.5	55.8	85.36	56.0
2,302.1	0.89	81.95	2,300.6	4.7	56.9	85.29	57.1
2,365.6	0.77	79.56	2,364.0	4.8	57.8	85.22	58.0
2,429.2	0.65	83.44	2,427.6	5.0	58.6	85.17	58.8
2,492.7	0.50	86.12	2,491.1	5.0	59.2	85.16	59.4
2,556.3	0.35	77.06	2,554.7	5.1	59.7	85.14	59.9
2,619.8	0.29	85.85	2,618.2	5.1	60.0	85.12	60.2
2,682.4	0.24	87.67	2,680.8	5.1	60.3	85.12	60.5
2,745.9	0.14	93.03	2,744.3	5.1	60.5	85.14	60.7
2,809.5	0.10	112.59	2,807.9	5.1	60.6	85.17	60.9
2,873.0	0.11	141.41	2,871.4	5.1	60.7	85.24	60.9
2,936.6	0.12	137.51	2,935.0	5.0	60.8	85.34	61.0
2,999.1	0.09	146.86	2,997.5	4.9	60.9	85.43	61.1
3,063.0	0.07	102.65	3,061.4	4.8	61.0	85.48	61.1
3,126.9	0.04	87.02	3,125.3	4.8	61.0	85.49	61.2
3,190.7	0.04	261.31	3,189.1	4.8	61.0	85.50	61.2
3,253.6	0.09	248.13	3,252.0	4.8	60.9	85.51	61.1
3,316.4	0.13	238.61	3,314.8	4.7	60.8	85.56	61.0
3,380.3	0.21	241.51	3,378.7	4.6	60.7	85.63	60.9
3,443.2	0.27	235.53	3,441.6	4.5	60.5	85.75	60.6



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SDI Standard Survey Report



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Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	KB Elev (20') @ 3215 0usft (Key #880)
Site:	Gadwall "18" Federal Com #2H	MD Reference:	KB Elev (20') @ 3215 0usft (Key #880)
Well:	Gadwall "18" Federal Com #2H (150' FNL & 241' 0" J50' #32D1011961	North Reference:	Grid
Wellbore:		Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM-Regulatory

Survey								
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)	
3,507.0	0.32	232.64	3,505.4	4.3	60.2	85.91	60.3	
3,570.9	0.42	234.14	3,569.3	4.1	59.9	86.12	60.0	
3,634.7	0.43	235.33	3,633.1	3.8	59.5	86.36	59.6	
3,698.6	0.44	232.42	3,697.0	3.5	59.1	86.61	59.2	
3,761.5	0.44	224.77	3,759.9	3.2	58.7	86.90	58.8	
3,825.3	0.46	233.27	3,823.7	2.9	58.3	87.20	58.4	
3,888.2	0.46	228.18	3,886.6	2.5	57.9	87.50	58.0	
3,951.0	0.59	229.11	3,949.4	2.2	57.5	87.86	57.6	
4,015.9	0.69	244.42	4,014.3	1.8	56.9	88.22	56.9	
4,078.8	0.70	243.01	4,077.2	1.4	56.2	88.54	56.2	
4,142.6	0.68	242.92	4,141.0	1.1	55.5	88.89	55.6	
4,206.5	0.66	241.01	4,204.9	0.7	54.9	89.24	54.9	
4,269.3	0.59	236.20	4,267.7	0.4	54.3	89.61	54.3	
4,333.2	0.54	238.25	4,331.6	0.0	53.8	89.97	53.8	
4,396.1	0.48	238.19	4,394.5	-0.3	53.3	90.28	53.3	
4,460.9	0.44	232.27	4,459.3	-0.6	52.9	90.61	52.9	
4,524.8	0.45	225.72	4,523.2	-0.9	52.5	90.96	52.5	
4,587.6	0.38	215.47	4,586.0	-1.2	52.2	91.35	52.2	
4,650.5	0.39	204.24	4,648.9	-1.6	52.0	91.75	52.0	
4,714.4	0.61	211.22	4,712.8	-2.1	51.7	92.30	51.8	
4,777.2	0.67	216.43	4,775.6	-2.7	51.3	92.97	51.4	
4,840.1	0.71	208.27	4,838.5	-3.3	50.9	93.71	51.0	
4,904.9	0.71	203.12	4,903.3	-4.0	50.6	94.55	50.7	
4,967.8	0.70	213.94	4,966.2	-4.7	50.2	95.35	50.4	
5,030.7	0.68	208.82	5,029.1	-5.3	49.8	96.13	50.1	
5,094.5	0.73	206.91	5,092.9	-6.0	49.4	96.96	49.8	
5,158.4	0.72	215.08	5,156.7	-6.7	49.0	97.82	49.5	
5,221.2	0.76	218.00	5,219.5	-7.4	48.6	98.65	49.1	
5,285.1	0.65	209.74	5,283.4	-8.0	48.1	99.48	48.8	
5,349.0	0.72	206.50	5,347.3	-8.7	47.8	100.33	48.5	
5,411.8	0.88	219.83	5,410.1	-9.4	47.3	101.28	48.2	
5,538.5	0.21	152.25	5,536.8	-10.4	46.8	102.52	47.9	
5,601.4	0.49	73.89	5,599.7	-10.4	47.1	102.47	48.2	
5,665.3	0.22	44.45	5,663.6	-10.2	47.4	102.19	48.5	
5,728.1	0.20	7.43	5,726.4	-10.1	47.5	101.95	48.6	
5,793.0	0.60	330.19	5,791.3	-9.6	47.4	101.51	48.3	
5,855.8	1.85	321.08	5,854.1	-8.6	46.6	100.43	47.3	
5,919.7	2.93	315.76	5,917.9	-6.6	44.8	98.38	45.3	
5,982.6	1.99	322.43	5,980.8	-4.6	43.0	96.08	43.2	
6,045.4	0.62	118.81	6,043.6	-3.9	42.6	95.20	42.8	
6,109.3	1.63	126.14	6,107.5	-4.6	43.7	95.99	43.9	
6,172.1	1.95	125.44	6,170.2	-5.7	45.2	97.22	45.6	
6,236.0	2.25	125.52	6,234.1	-7.1	47.1	98.55	47.7	
6,299.9	2.61	125.99	6,297.9	-8.7	49.3	99.97	50.1	
6,362.7	2.82	128.99	6,360.7	-10.5	51.7	101.46	52.8	



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SDI Standard Survey Report



Company:	Cimarex Energy	Local Co-ordinate Reference:	Site Gadwall "18" Federal Com #2H
Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	KB Elev (20') @ 3215.0usft (Key #880)
Site:	Gadwall "18" Federal Com #2H	MD Reference:	KB Elev (20') @ 3215.0usft (Key #880)
Well:	Gadwall "18" Federal Com #2H (150' FNL & 2410' FNL)	North Reference:	Grid
Wellbore:	2410' FNL #32D1011951	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM-Regulatory

Survey								
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)	
6,425.6	2.97	140.74	6,423.5	-12.7	53.9	103.27	55.4	
6,489.4	2.57	146.13	6,487.2	-15.2	55.8	105.23	57.8	
6,552.3	2.17	146.97	6,550.1	-17.4	57.2	106.87	59.8	
6,615.2	1.72	152.18	6,612.9	-19.2	58.3	108.22	61.4	
6,679.0	1.43	156.27	6,676.7	-20.8	59.1	109.37	62.6	
6,742.9	1.46	159.00	6,740.6	-22.3	59.7	110.45	63.7	
6,806.7	1.62	164.85	6,804.3	-23.9	60.2	111.64	64.8	
6,871.6	1.97	164.88	6,869.2	-25.8	60.7	113.05	66.0	
6,932.5	2.15	162.25	6,930.1	-27.9	61.4	114.48	67.4	
6,996.3	2.26	166.40	6,993.8	-30.3	62.0	116.04	69.0	
7,059.2	2.40	166.75	7,056.7	-32.8	62.6	117.64	70.7	
7,122.0	2.36	156.04	7,119.4	-35.3	63.4	119.06	72.6	
7,186.9	2.48	140.14	7,184.3	-37.6	64.9	120.06	75.0	
7,249.8	2.44	132.08	7,247.1	-39.5	66.8	120.61	77.6	
7,312.6	2.31	135.41	7,309.9	-41.3	68.6	121.03	80.1	
7,375.5	2.21	138.98	7,372.7	-43.1	70.3	121.51	82.5	



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Wellbore:	OH - Job #32D1011961	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM-Regulatory

Project	Eddy County, NM (NAD83 NME)		
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Map Zone:	New Mexico Eastern Zone		

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Site Position:	Map	Northings:	413,530 80 usft
From:		Easting:	573,169 00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	0"
		Latitude:	32° 8' 12 599 N
		Longitude:	104° 13' 49 779 W
		Grid Convergence:	0 05 °

Well	Gadwall "18" Federal Com #2H (150' FNL & 2310' FWL)		
Well Position	+N/-S	0 0 usft	Northings:
	+E/-W	0 0 usft	Easting:
Position Uncertainty	0 0 usft	Wellhead Elevation:	usft
		Latitude:	32° 8' 12 599 N
		Longitude:	104° 13' 49 779 W
		Ground Level:	3,195 0 usft

Wellbore	OH - Job #32D1011961		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010	10/8/2011	(°)
			Dip Angle
			(°)
			Field Strength
			(nT)
			7 84
			59 98
			48,459

Design	Actual		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0 0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0 0	0 0	0 0
			Direction
			(°)
			181.33

Survey Program	Date 11/15/2011		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		Description
121 2	7,375.5	Gyro Survey (OH - Job #32D1011961)	Keeper
7,409 0	12,379 0	MWD Survey (OH - Job #32D1011961)	MWD
			Standard Wireline Keeper ver 1 0 2
			MWD - Standard

Survey							
Measured Depth	Inclination	Azimuth	True Vertical	North/South	East/West	Closure Azimuth	Closure Distance
(usft)	(°)	(°)	Depth	(usft)	(usft)	(°)	(usft)
7,375 5	2 21	138 98	7,372 7	-43.1	70 3	121 51	82 5
7,409 0	2 00	142 73	7,406 2	-44.1	71 1	121 79	83 6
7,441 0	3 71	162 53	7,438 1	-45.5	71 7	122.38	85.0
7,473 0	9 28	170 94	7,469.9	-49 0	72 5	124 08	87.5
7,505.0	14 64	172 52	7,501 2	-55 6	73 4	127 14	92.1
7,537.0	19 90	175 44	7,531 8	-65 0	74.4	131.18	98 8
7,568 0	24 73	178 83	7,560.4	-76.8	74 9	135 71	107 3
7,600 0	29 34	181.57	7,588 9	-91 3	74 8	140 67	118 1
7,632 0	33.90	182 02	7,616 2	-108 1	74 3	145.50	131.2
7,664 0	38 78	181 93	7,641.9	-127 0	73 7	149 90	146 8
7,696 0	44.22	180.77	7,665 9	-148.2	73 2	153 73	165 3



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Wellbore:	2410' FNL #2D1011961	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM-Regulatory

Survey:							
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
7,727.0	49.54	180.83	7,687.1	-170.8	72.8	156.91	185.7
7,759.0	55.31	180.79	7,706.6	-196.2	72.5	159.72	209.2
7,791.0	60.92	181.49	7,723.5	-223.3	71.9	162.15	234.6
7,822.0	66.41	181.93	7,737.2	-251.1	71.1	164.19	261.0
7,854.0	71.90	182.53	7,748.6	-281.0	69.9	166.02	289.6
7,886.0	74.69	181.86	7,757.8	-311.6	68.8	167.55	319.1
7,918.0	77.02	180.67	7,765.6	-342.6	68.1	168.76	349.3
7,949.0	78.64	179.91	7,772.2	-372.9	67.9	169.68	379.1
7,981.0	80.75	179.08	7,777.9	-404.4	68.2	170.43	410.1
8,012.0	83.36	179.00	7,782.2	-435.1	68.7	171.02	440.5
8,044.0	85.79	179.13	7,785.2	-467.0	69.2	171.56	472.1
8,076.0	88.09	180.38	7,786.9	-498.9	69.4	172.08	503.7
8,107.0	88.82	181.01	7,787.7	-529.9	69.0	172.58	534.4
8,139.0	88.99	181.13	7,788.4	-561.9	68.4	173.06	566.0
8,171.0	89.39	181.18	7,788.8	-593.9	67.8	173.49	597.7
8,203.0	90.00	181.75	7,789.0	-625.9	66.9	173.89	629.4
8,235.0	90.40	181.91	7,788.9	-657.8	65.9	174.28	661.1
8,266.0	90.54	181.78	7,788.6	-688.8	64.9	174.62	691.9
8,330.0	90.94	181.76	7,787.8	-752.8	63.0	175.22	755.4
8,394.0	90.57	182.44	7,786.9	-816.7	60.6	175.76	819.0
8,457.0	91.35	182.69	7,785.9	-879.7	57.8	176.24	881.6
8,520.0	89.76	182.37	7,785.3	-942.6	55.0	176.66	944.2
8,584.0	90.34	182.32	7,785.2	-1,006.5	52.4	177.02	1,007.9
8,647.0	90.77	182.23	7,784.6	-1,069.5	49.9	177.33	1,070.7
8,711.0	91.55	182.13	7,783.3	-1,133.4	47.5	177.60	1,134.4
8,774.0	90.34	182.25	7,782.3	-1,196.4	45.0	177.84	1,197.2
8,837.0	90.91	182.16	7,781.6	-1,259.3	42.6	178.06	1,260.0
8,901.0	90.47	183.02	7,780.8	-1,323.3	39.7	178.28	1,323.9
8,964.0	88.76	183.38	7,781.2	-1,386.2	36.2	178.50	1,386.6
9,027.0	88.52	183.38	7,782.7	-1,449.0	32.5	178.72	1,449.4
9,091.0	89.09	183.15	7,784.1	-1,512.9	28.9	178.91	1,513.2
9,154.0	89.53	183.14	7,784.8	-1,575.8	25.4	179.08	1,576.0
9,218.0	90.10	183.14	7,785.0	-1,639.7	21.9	179.23	1,639.9
9,281.0	89.19	183.02	7,785.4	-1,702.6	18.5	179.38	1,702.7
9,345.0	89.19	182.73	7,786.3	-1,766.5	15.3	179.50	1,766.6
9,408.0	89.73	182.58	7,786.9	-1,829.5	12.4	179.61	1,829.5
9,472.0	90.57	182.41	7,786.8	-1,893.4	9.6	179.71	1,893.4
9,535.0	89.70	182.32	7,786.6	-1,956.3	7.0	179.80	1,956.4
9,599.0	89.70	181.71	7,786.9	-2,020.3	4.7	179.87	2,020.3
9,662.0	88.89	181.59	7,787.7	-2,083.3	2.9	179.92	2,083.3
9,726.0	89.36	181.39	7,788.7	-2,147.2	1.3	179.97	2,147.2
9,789.0	89.93	181.06	7,789.1	-2,210.2	-0.1	180.00	2,210.2
9,853.0	88.99	181.72	7,789.7	-2,274.2	-1.6	180.04	2,274.2
9,916.0	89.33	181.73	7,790.6	-2,337.2	-3.5	180.09	2,337.2



Scientific Drilling International, Inc.
SDI Standard Survey Report



Company:	Cimarex Energy	Local Co-ordinate Reference:	Site Gadwall "18" Federal Com #2H
Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	KB Elev (20') @ 3215.0usft (Key #880)
Site:	Gadwall "18" Federal Com #2H	MD Reference:	KB Elev (20') @ 3215.0usft (Key #880)
Well:	Gadwall "18" Federal Com #2H (150' FNL & 241' 0.50' FNL)	North Reference:	Grid
Wellbore:	241' 0.50' FNL 32D1011961	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM-Regulatory

Survey							
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
9,979.0	88.82	182.57	7,791.6	-2,400.1	-5.9	180.14	2,400.1
10,042.0	89.06	182.53	7,792.8	-2,463.0	-8.7	180.20	2,463.1
10,106.0	89.02	182.24	7,793.9	-2,527.0	-11.4	180.26	2,527.0
10,169.0	89.09	181.84	7,794.9	-2,589.9	-13.6	180.30	2,590.0
10,233.0	89.76	182.62	7,795.6	-2,653.9	-16.1	180.35	2,653.9
10,296.0	89.93	182.66	7,795.7	-2,716.8	-19.0	180.40	2,716.9
10,360.0	90.74	182.79	7,795.4	-2,780.7	-22.0	180.45	2,780.8
10,423.0	90.84	182.59	7,794.5	-2,843.7	-25.0	180.50	2,843.8
10,486.0	90.97	182.34	7,793.5	-2,906.6	-27.7	180.55	2,906.7
10,550.0	89.87	182.45	7,793.0	-2,970.5	-30.4	180.59	2,970.7
10,613.0	90.17	182.20	7,793.0	-3,033.5	-32.9	180.62	3,033.7
10,676.0	90.27	181.74	7,792.8	-3,096.4	-35.1	180.65	3,096.6
10,740.0	89.93	180.82	7,792.6	-3,160.4	-36.5	180.66	3,160.6
10,803.0	88.89	180.28	7,793.3	-3,223.4	-37.1	180.66	3,223.6
10,866.0	89.29	181.02	7,794.3	-3,286.4	-37.8	180.66	3,286.6
10,930.0	89.70	181.50	7,794.9	-3,350.4	-39.2	180.67	3,350.6
10,993.0	90.77	182.66	7,794.6	-3,413.3	-41.5	180.70	3,413.6
11,057.0	91.14	182.35	7,793.5	-3,477.3	-44.3	180.73	3,477.6
11,120.0	90.91	182.52	7,792.4	-3,540.2	-47.0	180.76	3,540.5
11,184.0	91.78	182.75	7,790.9	-3,604.1	-49.9	180.79	3,604.5
11,247.0	90.34	182.82	7,789.7	-3,667.0	-53.0	180.83	3,667.4
11,311.0	88.92	182.14	7,790.1	-3,731.0	-55.8	180.86	3,731.4
11,374.0	88.79	181.49	7,791.4	-3,793.9	-57.8	180.87	3,794.4
11,438.0	89.26	181.16	7,792.5	-3,857.9	-59.3	180.88	3,858.4
11,501.0	89.60	180.89	7,793.1	-3,920.9	-60.4	180.88	3,921.4
11,564.0	89.53	180.80	7,793.6	-3,983.9	-61.3	180.88	3,984.4
11,628.0	88.89	181.70	7,794.5	-4,047.9	-62.7	180.89	4,048.3
11,691.0	89.26	181.49	7,795.5	-4,110.8	-64.5	180.90	4,111.3
11,754.0	89.60	181.22	7,796.1	-4,173.8	-65.9	180.91	4,174.3
11,818.0	90.17	181.05	7,796.3	-4,237.8	-67.2	180.91	4,238.3
11,882.0	89.29	181.14	7,796.6	-4,301.8	-68.4	180.91	4,302.3
11,945.0	89.09	182.04	7,797.4	-4,364.7	-70.2	180.92	4,365.3
12,008.0	89.53	182.42	7,798.2	-4,427.7	-72.6	180.94	4,428.3
12,072.0	89.90	182.24	7,798.5	-4,491.6	-75.2	180.96	4,492.3
12,135.0	90.30	181.99	7,798.4	-4,554.6	-77.6	180.98	4,555.3
12,199.0	90.71	181.91	7,797.9	-4,618.6	-79.7	180.99	4,619.2
12,262.0	90.77	181.83	7,797.0	-4,681.5	-81.8	181.00	4,682.2
12,331.0	91.01	181.74	7,796.0	-4,750.5	-83.9	181.01	4,751.2
Last MWD Survey							
12,379.0	91.01	181.74	7,795.1	-4,798.4	-85.4	181.02	4,799.2
Projection to Bit							



Scientific Drilling International, Inc.
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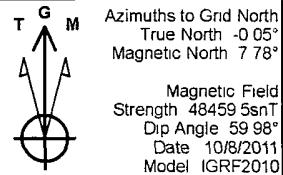
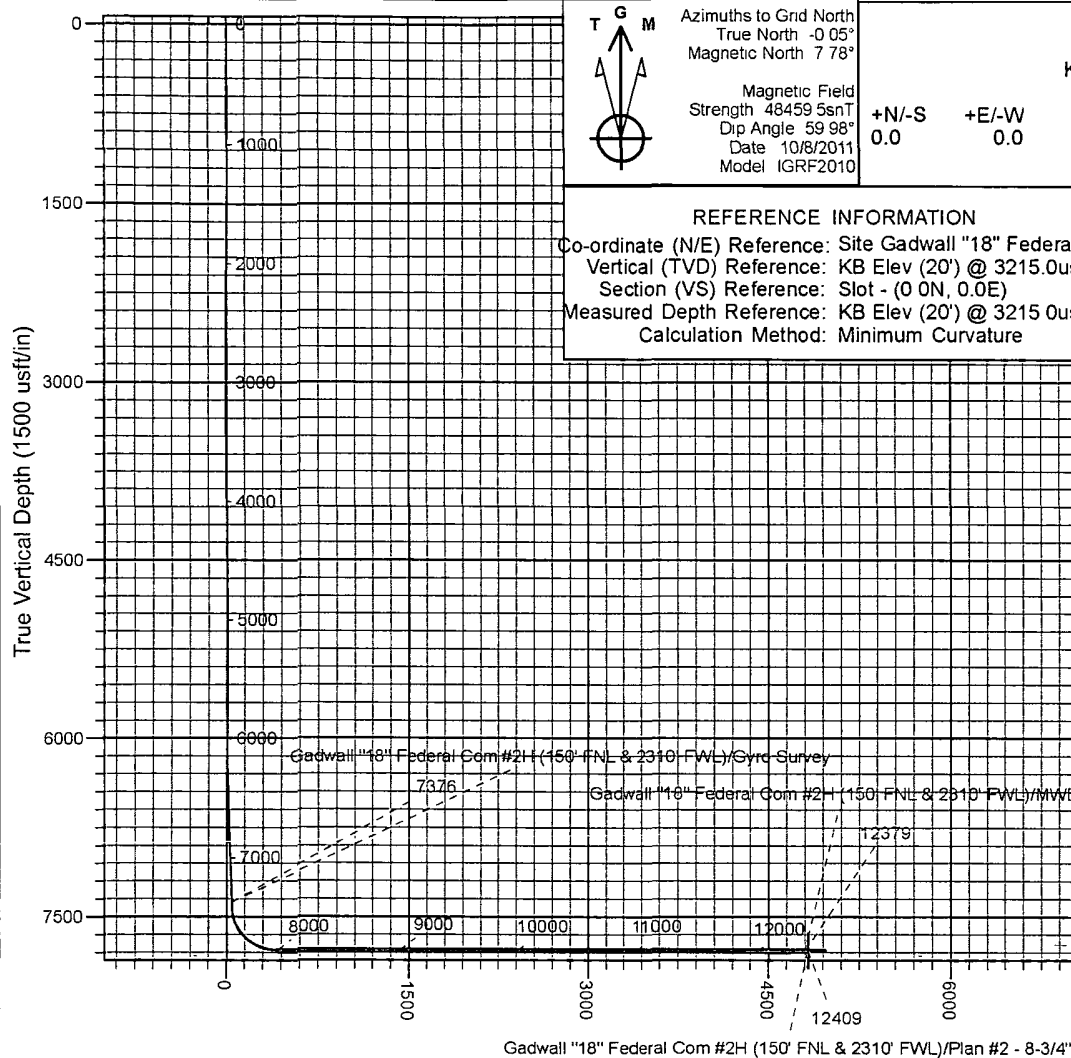


Company:	Cimarex Energy	Local Co-ordinate Reference:	Site Gadwall "18" Federal Com #2H
Project:	Eddy County, NM (NAD83 NME)	TVD Reference:	KB Elev (20') @ 3215.0usft (Key #880)
Site:	Gadwall "18" Federal Com #2H	MD Reference:	KB Elev (20') @ 3215.0usft (Key #880)
Well:	Gadwall "18" Federal Com #2H (150' FNL & 2410' JWB)	North Reference:	Grid
Wellbore:	2410' JWB	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM-Regulatory

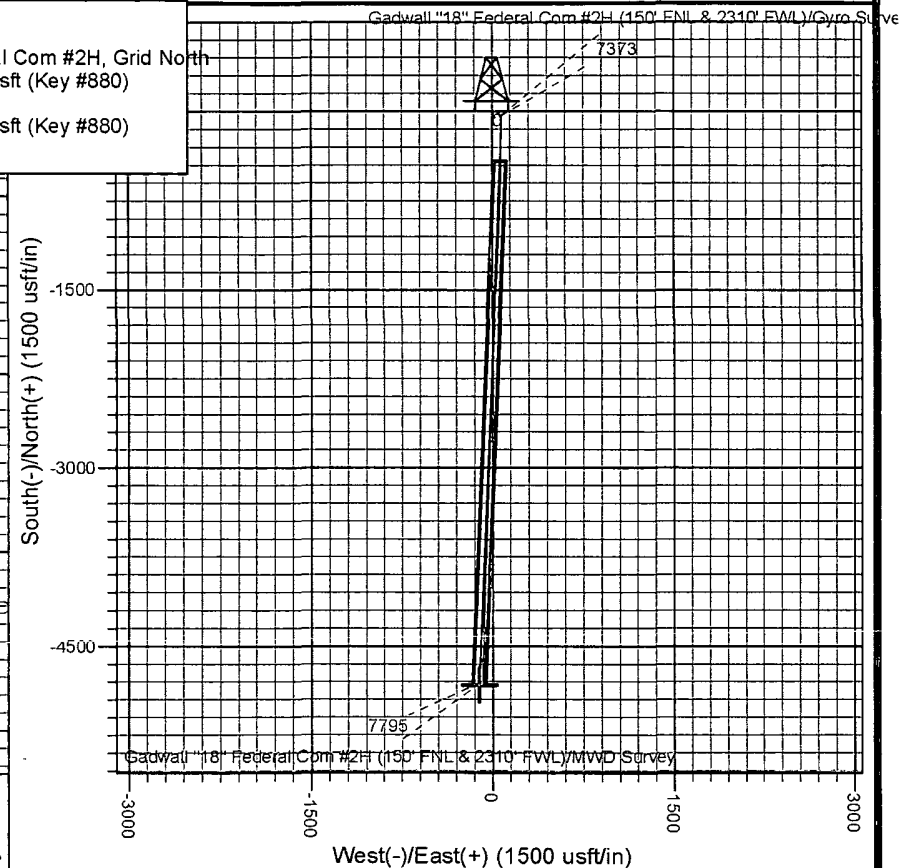
Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
12,331.0	7,796.0	-4,750.5	-83.9	Last MWD Survey
12,379.0	7,795.1	-4,798.4	-85.4	Projection to Bit



Project: Eddy County, NM (NAD83 NME)
 Site: Gadwall "18" Federal Com #2H
 Well: Gadwall "18" Federal Com #2H (150' FNL & 2310'
 Wellbore: OH - Job #32D1011961
 Design: Plan #2 - 8-3/4" Hole



WELL DETAILS: Gadwall "18" Federal Com #2H (150' FNL & 2310' FWL)
 KB Elev (20') @ 3215.0usft (Key #880)
 Ground Level: 3195.0
 Easting 573169.00
 Northing 413530.80
 Latitude 32° 8' 12.599 N
 Longitude 104° 13' 49.779 W
 Slot



COMPANY DETAILS: Cimarex Energy
 Calculation Method: Minimum Curvature
 Error System: ISCWSA
 Scan Method: Closest Approach 3D
 Error Surface: Elliptical Conic
 Warning Method: Error Ratio

PROJECT DETAILS: Eddy County, NM (NAD83 NME)
 Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: New Mexico Eastern Zone
 System Datum: Mean Sea Level

SITE DETAILS: Gadwall "18" Federal Com #2H
 Site Centre Latitude: 32° 8' 12.599 N
 Longitude: 104° 13' 49.779 W
 Positional Uncertainty: 0.0
 Convergence: 0.05
 Local North: Grid