

Results of Directional Survey

DD

API number:	30-025-40596			
OGRID:		Operator:	COG OPERATING LLC	
		Property:	SC FEDERAL	# 9

surface	ULSTR:	P	22	T 17S	R 32E
				1195 FSL	800 FEL

BH Loc	ULSTR:	P	22	T 17S	R 32E
7112	MD	7098.9	TVD	973 FSL	972 FEL

Top Perf/OH	ULSTR:	P	22	T 17S	R 32E
5645	MD	5632.0	TVD	973 FSL	975 FEL

Bot Perf/OH	ULSTR:	P	22	T 17S	R 32E
6808	MD	6794.9	TVD	972 FSL	974 FEL

	MD	N/S	E/W	VD
	5633	-221.87	-174.51	5620
TOP PERFS/OH	5645	-221.80	-174.56	5632.00
	5722	-221.35	-174.88	5709.00
	6795	-222.60	-174.24	6781.90
BOT PERFS/OH	6808	-222.57	-174.12	6794.90
	6885	-222.36	-173.43	6871.90

NEXT TO LAST	7052.00	-222.04	-172.10	7038.89
LAST READING	7112.00	-222.12	-171.90	7098.89
TD	7112	-222.12	-171.90	7098.89

Surface Location	1195	FS	800	FE
Projected BHL	973	FS	972	FE
Location of				
Top Perfs/OH	973	FS	975	FE
Bottom Perfs/OH	972	FS	974	FE

SUMMARY of Subsurface Locations

Surface Location	P-22-17S-32E	1195	FS	800	FE	Vert. Depth
Top Perfs/OH	P-22-17S-32E	973	FS	975	FE	5632.00
Bottom Perfs/OH	P-22-17S-32E	972	FS	974	FE	6794.90
Projected TD	P-22-17S-32E	973	FS	972	FE	7098.89

NOV 18 2014



HOBBS OCD

NOV 12 2014

RECEIVED

1407 Northpark Dr.
Kingwood, TX 77339
Cell: (281) 851-8112
Efax: (281) 966-1566

BlueStar MWD, LP performed a MWD survey for ConocoPhillips' SC Federal 9, located in Lea County, NM. The API number is: 30-025-40596. The surveys were taken from 898 MD to 7052 MD and ranged over the dates from 30-Mar-14 to 3-Apr-14 and are certified as being true and correct.

A handwritten signature in black ink, appearing to read "Greg Nazzal". The signature is fluid and cursive, written over a white background.

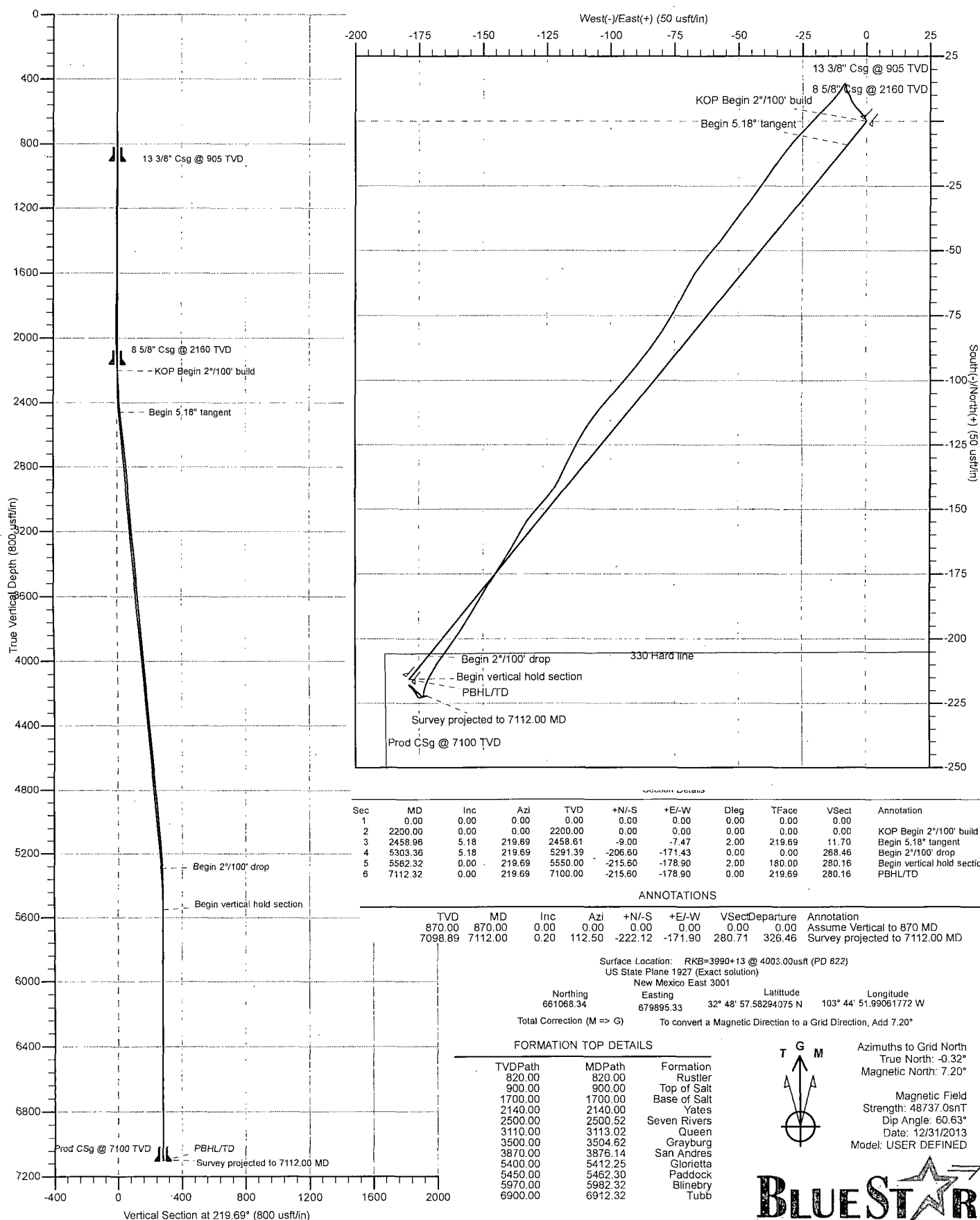
Certification by Greg Nazzal
President

ConocoPhillips

Well: SC Federal 9
 Site: SC Federal
 Project: Lea County, New Mexico
 Design: rev0
 Rig: PD 822

NOV 12 2014

RECEIVED





ConocoPhillips

Lea County, New Mexico

SC Federal

SC Federal 9

Original Hole

Design: Surveys Original Hole

Standard Survey Report

29 April, 2014



Company:	ConocoPhillips	Local Co-ordinate Reference:	Well SC Federal 9
Project:	Lea County, New Mexico	TVD Reference:	RKB=3990+13 @ 4003.00usft (PD 822)
Site:	SC Federal	MD Reference:	RKB=3990+13 @ 4003.00usft (PD 822)
Well:	SC Federal 9	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Surveys Original Hole	Database:	EDM 5000.1 Ddatabase

Project	Lea County, New Mexico		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	SC Federal		
Site Position:		Northing:	661,068.40 usft
From:	Map	Easting:	679,895.30 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 48' 57.58353609 N
		Longitude:	103° 44' 51.99096534 W
		Grid Convergence:	0.32 °

Well	SC Federal 9		
Well Position	+N/-S	0.00 usft	Northing:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 48' 57.58294075 N
		Longitude:	103° 44' 51.99061771 W
		Ground Level:	3,990.00 usft

Wellbore	Original Hole		
Magnetics	Model Name	Sample Date	Declination
			(°)
	User Defined	12/31/2013	7.52
			Dip Angle
			(°)
			Field Strength
			(nT)
			60.63
			48,737

Design	Surveys Original Hole		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction
			(°)
			219.69

Survey Program	Date 4/29/2014		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
870.00	7,112.00	MWD (Original Hole)	MWD
			Description
			MWD - Standard

Survey									
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Vertical Section	Dogleg Rate	Build Rate	Turn Rate
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
870.00	0.00	0.00	870.00	0.00	0.00	0.00	0.00	0.00	0.00
Assume Vertical to 870 MD									
898.00	0.80	330.10	898.00	0.17	-0.10	-0.07	2.86	2.86	0.00
987.00	0.90	338.10	986.99	1.36	-0.67	-0.62	0.17	0.11	8.99
1,076.00	1.30	314.60	1,075.97	2.71	-1.65	-1.04	0.67	0.45	-26.40
1,166.00	1.30	311.20	1,165.95	4.10	-3.14	-1.15	0.09	0.00	-3.78
1,255.00	1.30	324.50	1,254.93	5.59	-4.49	-1.44	0.34	0.00	14.94
1,344.00	0.70	320.70	1,343.91	6.83	-5.42	-1.80	0.68	-0.67	-4.27
1,434.00	0.60	338.30	1,433.91	7.70	-5.94	-2.13	0.25	-0.11	19.56
1,523.00	0.60	335.80	1,522.90	8.55	-6.30	-2.56	0.03	0.00	-2.81

Company:	ConocoPhillips	Local Co-ordinate Reference:	Well SC Federal 9
Project:	Lea County, New Mexico	TVD Reference:	RKB=3990+13 @ 4003.00usft (PD 822)
Site:	SC Federal	MD Reference:	RKB=3990+13 @ 4003.00usft (PD 822)
Well:	SC Federal 9	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Surveys Original Hole	Database:	EDM 5000.1 Ddatabase

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,612.00	0.80	347.30	1,611.90	9.59	-6.63	-3.14	0.27	0.22	12.92
1,702.00	0.90	321.90	1,701.89	10.75	-7.21	-3.67	0.43	0.11	-28.22
1,791.00	1.00	336.20	1,790.87	12.02	-7.95	-4.17	0.29	0.11	16.07
1,880.00	0.90	5.70	1,879.86	13.42	-8.20	-5.09	0.55	-0.11	33.15
1,970.00	0.60	324.90	1,969.86	14.51	-8.40	-5.80	0.66	-0.33	-45.33
2,059.00	1.50	206.00	2,058.85	13.84	-9.17	-4.79	2.10	1.01	-133.60
2,148.00	2.20	212.40	2,147.80	11.36	-10.60	-1.97	0.82	0.79	7.19
2,238.00	3.50	225.20	2,237.69	7.96	-13.48	2.48	1.60	1.44	14.22
2,327.00	4.20	224.50	2,326.49	3.72	-17.69	8.43	0.79	0.79	-0.79
2,417.00	5.00	223.40	2,416.19	-1.48	-22.69	15.63	0.89	0.89	-1.22
2,506.00	5.80	222.60	2,504.80	-7.61	-28.40	23.99	0.90	0.90	-0.90
2,595.00	6.50	215.70	2,593.29	-15.01	-34.39	33.51	1.14	0.79	-7.75
2,684.00	6.20	214.20	2,681.74	-23.07	-40.03	43.32	0.39	-0.34	-1.69
2,819.00	5.10	219.50	2,816.08	-33.73	-47.94	56.58	0.90	-0.81	3.93
2,908.00	5.00	212.60	2,904.74	-40.05	-52.55	64.38	0.69	-0.11	-7.75
2,997.00	5.40	219.80	2,993.37	-46.54	-57.32	72.42	0.86	0.45	8.09
3,086.00	4.80	221.20	3,082.02	-52.56	-62.45	80.33	0.69	-0.67	1.57
3,175.00	5.00	213.80	3,170.70	-58.58	-67.06	87.91	0.74	0.22	-8.31
3,264.00	5.30	205.90	3,259.34	-65.50	-71.01	95.76	0.86	0.34	-8.88
3,354.00	6.00	208.90	3,348.90	-73.36	-75.10	104.42	0.84	0.78	3.33
3,443.00	5.50	214.70	3,437.45	-80.94	-79.78	113.23	0.86	-0.56	6.52
3,532.00	5.10	217.20	3,526.07	-87.60	-84.60	121.43	0.52	-0.45	2.81
3,621.00	5.00	219.40	3,614.73	-93.74	-89.45	129.26	0.24	-0.11	2.47
3,710.00	4.80	221.70	3,703.40	-99.52	-94.39	136.86	0.31	-0.22	2.58
3,800.00	4.80	220.10	3,793.09	-105.21	-99.32	144.39	0.15	0.00	-1.78
3,889.00	4.90	221.60	3,881.77	-110.90	-104.24	151.92	0.18	0.11	1.69
3,978.00	5.10	211.20	3,970.43	-117.13	-108.82	159.63	1.04	0.22	-11.69
4,068.00	5.40	209.30	4,060.05	-124.25	-112.96	167.75	0.39	0.33	-2.11
4,157.00	5.30	206.00	4,148.67	-131.59	-116.81	175.86	0.36	-0.11	-3.71
4,246.00	5.20	206.40	4,237.29	-138.90	-120.41	183.78	0.12	-0.11	0.45
4,336.00	4.80	221.60	4,326.95	-145.37	-124.72	191.51	1.53	-0.44	16.89
4,425.00	5.20	222.30	4,415.62	-151.14	-129.91	199.26	0.45	0.45	0.79
4,514.00	5.60	208.60	4,504.22	-157.93	-134.70	207.56	1.51	0.45	-15.39
4,604.00	6.00	212.20	4,593.76	-165.77	-139.31	216.53	0.60	0.44	4.00
4,694.00	5.20	212.70	4,683.33	-173.18	-144.02	225.24	0.89	-0.89	0.56
4,783.00	4.90	212.90	4,771.99	-179.77	-148.26	233.02	0.34	-0.34	0.22
4,872.00	5.20	210.40	4,860.64	-186.44	-152.37	240.77	0.42	0.34	-2.81
4,917.00	5.20	212.50	4,905.46	-189.91	-154.50	244.81	0.42	0.00	4.67
4,962.00	5.10	211.90	4,950.28	-193.33	-156.65	248.81	0.25	-0.22	-1.33
5,007.00	5.10	212.80	4,995.10	-196.71	-158.79	252.78	0.18	0.00	2.00
5,051.00	4.90	217.30	5,038.93	-199.85	-160.99	256.60	1.00	-0.45	10.23
5,096.00	5.00	213.50	5,083.76	-203.01	-163.23	260.47	0.76	0.22	-8.44
5,141.00	5.10	218.10	5,128.59	-206.22	-165.55	264.42	0.93	0.22	10.22

Company:	ConocoPhillips	Local Co-ordinate Reference:	Well SC Federal 9
Project:	Lea County, New Mexico	TVD Reference:	RKB=3990+13 @ 4003.00usft (PD 822)
Site:	SC Federal	MD Reference:	RKB=3990+13 @ 4003.00usft (PD 822)
Well:	SC Federal 9	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Surveys Original Hole	Database:	EDM 5000.1 Ddatabase

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,185.00	4.80	213.50	5,172.42	-209.30	-167.77	268.20	1.13	-0.68	-10.45
5,275.00	3.70	208.60	5,262.18	-214.99	-171.24	274.80	1.29	-1.22	-5.44
5,365.00	2.40	189.20	5,352.05	-219.40	-172.93	279.27	1.82	-1.44	-21.56
5,454.00	1.00	195.20	5,441.01	-221.99	-173.44	281.58	1.58	-1.57	6.74
5,544.00	0.60	310.70	5,531.00	-222.44	-174.00	282.29	1.52	-0.44	128.33
5,633.00	0.40	329.10	5,620.00	-221.87	-174.51	282.18	0.29	-0.22	20.67
5,722.00	0.40	323.30	5,709.00	-221.35	-174.86	282.00	0.05	0.00	-6.52
5,812.00	0.70	297.90	5,798.99	-220.84	-175.53	282.04	0.42	0.33	-28.22
5,901.00	0.70	320.40	5,887.99	-220.17	-176.36	282.05	0.31	0.00	25.28
5,991.00	0.60	315.20	5,977.98	-219.41	-177.04	281.90	0.13	-0.11	-5.78
6,080.00	0.60	319.00	6,066.97	-218.73	-177.67	281.78	0.04	0.00	4.27
6,169.00	0.80	307.40	6,155.97	-218.00	-178.47	281.73	0.27	0.22	-13.03
6,259.00	0.20	205.40	6,245.97	-217.76	-179.04	281.91	0.96	-0.67	-113.33
6,304.00	0.80	134.60	6,290.96	-218.05	-178.85	282.01	1.68	1.33	-157.33
6,393.00	1.40	135.10	6,379.95	-219.26	-177.64	282.17	0.67	0.67	0.56
6,438.00	1.30	143.90	6,424.93	-220.06	-176.95	282.35	0.51	-0.22	19.56
6,527.00	1.00	157.80	6,513.92	-221.59	-176.06	282.96	0.46	-0.34	15.62
6,616.00	0.50	127.90	6,602.91	-222.55	-175.46	283.31	0.70	-0.56	-33.60
6,706.00	0.40	73.60	6,692.91	-222.70	-174.85	283.04	0.47	-0.11	-60.33
6,795.00	0.40	87.50	6,781.90	-222.60	-174.24	282.57	0.11	0.00	15.62
6,885.00	0.70	64.90	6,871.90	-222.36	-173.43	281.87	0.41	0.33	-25.11
6,974.00	0.50	79.10	6,960.90	-222.05	-172.56	281.07	0.28	-0.22	15.96
7,052.00	0.20	112.50	7,038.89	-222.04	-172.10	280.77	0.45	-0.38	42.82
7,112.00	0.20	112.50	7,098.89	-222.12	-171.90	280.71	0.00	0.00	0.00

Survey projected to 7112.00 MD

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
870.00	870.00	0.00	0.00	Assume Vertical to 870 MD
7,112.00	7,098.89	-222.12	-171.90	Survey projected to 7112.00 MD

Company:	ConocoPhillips	Local Co-ordinate Reference:	Well SC Federal 9
Project:	Lea County, New Mexico	TVD Reference:	RKB=3990+13 @ 4003.00usft (PD 822)
Site:	SC Federal	MD Reference:	RKB=3990+13 @ 4003.00usft (PD 822)
Well:	SC Federal 9	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Surveys Original Hole	Database:	EDM 5000.1 Ddatabase

Project	Lea County, New Mexico		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	SC Federal		
Site Position:		Northing:	661,068.40 usft
From:	Map	Easting:	679,895.30 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 48' 57.58353609 N
		Longitude:	103° 44' 51.99061771 W
		Grid Convergence:	0.32 °

Well	SC Federal 9		
Well Position	+N/-S	0.00 usft	Northing:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 48' 57.58294075 N
		Longitude:	103° 44' 51.99061771 W
		Ground Level:	3,990.00 usft

Wellbore	Original Hole		
Magnetics	Model Name	Sample Date	Declination
			(°)
	User Defined	12/31/2013	7.52
			Dip Angle
			(°)
			Field Strength
			(nT)
			60.63
			48,737

Design	Surveys Original Hole		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction
			(°)
			219.69

Survey Program	Date 4/29/2014		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
870.00	7,112.00	MWD (Original Hole)	MWD
			Description
			MWD - Standard

Survey										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Map	Map			
Depth	(°)	(°)	Depth	(usft)	(usft)	Northing	Easting	Latitude	Longitude	
(usft)			(usft)			(usft)	(usft)			
0.00	0.00	0.00	0.00	0.00	0.00	661,068.34	679,895.33	2° 48' 57.58294075 N	103° 44' 51.99061771 W	
870.00	0.00	0.00	870.00	0.00	0.00	661,068.34	679,895.33	2° 48' 57.58294075 N	103° 44' 51.99061771 W	
Assume Vertical to 870 MD										
898.00	0.80	330.10	898.00	0.17	-0.10	661,068.51	679,895.23	2° 48' 57.58462284 N	103° 44' 51.99174848 W	
987.00	0.90	338.10	986.99	1.36	-0.67	661,069.70	679,894.66	2° 48' 57.59640090 N	103° 44' 51.99835540 W	
1,076.00	1.30	314.60	1,075.97	2.71	-1.65	661,071.06	679,893.68	2° 48' 57.60988626 N	103° 44' 52.00974536 W	
1,166.00	1.30	311.20	1,165.95	4.10	-3.14	661,072.45	679,892.18	2° 48' 57.62371546 N	103° 44' 52.02717386 W	
1,255.00	1.30	324.50	1,254.93	5.59	-4.49	661,073.94	679,890.84	2° 48' 57.63850225 N	103° 44' 52.04284788 W	
1,344.00	0.70	320.70	1,343.91	6.83	-5.42	661,075.18	679,889.91	2° 48' 57.65084903 N	103° 44' 52.05367173 W	
1,434.00	0.60	338.30	1,433.91	7.70	-5.94	661,076.04	679,889.38	2° 48' 57.65941962 N	103° 44' 52.05973745 W	
1,523.00	0.60	335.80	1,522.90	8.55	-6.30	661,076.93	679,889.02	2° 48' 57.66792951 N	103° 44' 52.06393898 W	
1,612.00	0.80	347.30	1,611.90	9.59	-6.63	661,077.93	679,888.69	2° 48' 57.67815071 N	103° 44' 52.06771089 W	

Company:	ConocoPhillips	Local Co-ordinate Reference:	Well SC Federal 9
Project:	Lea County, New Mexico	TVD Reference:	RKB=3990+13 @ 4003.00usft (PD 822)
Site:	SC Federal	MD Reference:	RKB=3990+13 @ 4003.00usft (PD 822)
Well:	SC Federal 9	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Surveys Original Hole	Database:	EDM 5000.1 Ddatabase

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
1,702.00	0.90	321.90	1,701.89	10.75	-7.21	661,079.10	679,888.12	2° 48' 57.68975093 N	03° 44' 52.07436399 W
1,791.00	1.00	336.20	1,790.87	12.02	-7.95	661,080.36	679,887.37	2° 48' 57.70226565 N	03° 44' 52.08300817 W
1,880.00	0.90	5.70	1,879.86	13.42	-8.20	661,081.77	679,887.13	2° 48' 57.71619242 N	03° 44' 52.08577581 W
1,970.00	0.60	324.90	1,969.86	14.51	-8.40	661,082.85	679,886.93	2° 48' 57.72697782 N	03° 44' 52.08805753 W
2,059.00	1.50	206.00	2,058.85	13.84	-9.17	661,082.19	679,886.15	2° 48' 57.72043258 N	03° 44' 52.09722471 W
2,148.00	2.20	212.40	2,147.80	11.36	-10.60	661,079.70	679,884.72	2° 48' 57.69587885 N	03° 44' 52.11409532 W
2,238.00	3.50	225.20	2,237.69	7.96	-13.48	661,076.31	679,881.85	2° 48' 57.66244836 N	03° 44' 52.14800430 W
2,327.00	4.20	224.50	2,326.49	3.72	-17.69	661,072.07	679,877.64	2° 48' 57.62073600 N	03° 44' 52.19763385 W
2,417.00	5.00	223.40	2,416.19	-1.48	-22.69	661,066.87	679,872.63	2° 48' 57.56955281 N	03° 44' 52.25661534 W
2,506.00	5.80	222.60	2,504.80	-7.61	-28.40	661,060.74	679,866.92	2° 48' 57.50922657 N	03° 44' 52.32390592 W
2,595.00	6.50	215.70	2,593.29	-15.01	-34.39	661,053.34	679,860.94	2° 48' 57.43631885 N	03° 44' 52.39449969 W
2,684.00	6.20	214.20	2,681.74	-23.07	-40.03	661,045.27	679,855.30	2° 48' 57.35681693 N	03° 44' 52.46112100 W
2,819.00	5.10	219.50	2,816.08	-33.73	-47.94	661,034.61	679,847.38	2° 48' 57.25177259 N	03° 44' 52.55455105 W
2,908.00	5.00	212.60	2,904.74	-40.05	-52.55	661,028.29	679,842.78	2° 48' 57.18949058 N	03° 44' 52.60892956 W
2,997.00	5.40	219.80	2,993.37	-46.54	-57.32	661,021.81	679,838.01	2° 48' 57.12558414 N	03° 44' 52.66524621 W
3,086.00	4.80	221.20	3,082.02	-52.56	-62.45	661,015.79	679,832.87	2° 48' 57.06630557 N	03° 44' 52.72578759 W
3,175.00	5.00	213.80	3,170.70	-58.58	-67.06	661,009.76	679,828.26	2° 48' 57.00694398 N	03° 44' 52.78019982 W
3,264.00	5.30	205.90	3,259.34	-65.50	-71.01	661,002.84	679,824.31	2° 48' 56.93868132 N	03° 44' 52.82696876 W
3,354.00	6.00	208.90	3,348.90	-73.36	-75.10	660,994.98	679,820.22	2° 48' 56.86115816 N	03° 44' 52.87539055 W
3,443.00	5.50	214.70	3,437.45	-80.94	-79.78	660,987.41	679,815.55	2° 48' 56.78642163 N	03° 44' 52.93067427 W
3,532.00	5.10	217.20	3,526.07	-87.60	-84.60	660,980.75	679,810.73	2° 48' 56.72081019 N	03° 44' 52.98758120 W
3,621.00	5.00	219.40	3,614.73	-93.74	-89.45	660,974.60	679,805.87	2° 48' 56.66024296 N	03° 44' 53.04484972 W
3,710.00	4.80	221.70	3,703.40	-99.52	-94.39	660,968.82	679,800.93	2° 48' 56.60334820 N	03° 44' 53.10309516 W
3,800.00	4.80	220.10	3,793.09	-105.21	-99.32	660,963.13	679,796.00	2° 48' 56.54729850 N	03° 44' 53.16123564 W
3,889.00	4.90	221.60	3,881.77	-110.90	-104.24	660,957.44	679,791.08	2° 48' 56.49125873 N	03° 44' 53.21927928 W
3,978.00	5.10	211.20	3,970.43	-117.13	-108.82	660,951.21	679,786.51	2° 48' 56.42990140 N	03° 44' 53.27326598 W
4,068.00	5.40	209.30	4,060.05	-124.25	-112.96	660,944.10	679,782.36	2° 48' 56.35972811 N	03° 44' 53.32229280 W
4,157.00	5.30	206.00	4,148.67	-131.59	-116.81	660,936.75	679,778.51	2° 48' 56.28724527 N	03° 44' 53.36789742 W
4,246.00	5.20	206.40	4,237.29	-138.90	-120.41	660,929.45	679,774.92	2° 48' 56.21513971 N	03° 44' 53.41049775 W
4,336.00	4.80	221.60	4,326.95	-145.37	-124.72	660,922.98	679,770.60	2° 48' 56.15136294 N	03° 44' 53.46146211 W
4,425.00	5.20	222.30	4,415.62	-151.14	-129.91	660,917.21	679,765.42	2° 48' 56.09457688 N	03° 44' 53.52260984 W
4,514.00	5.60	208.60	4,504.22	-157.93	-134.70	660,910.41	679,760.62	2° 48' 56.02759405 N	03° 44' 53.57921521 W
4,604.00	6.00	212.20	4,593.76	-165.77	-139.31	660,902.58	679,756.02	2° 48' 55.95031188 N	03° 44' 53.63372428 W
4,694.00	5.20	212.70	4,683.33	-173.18	-144.02	660,895.16	679,751.31	2° 48' 55.87722367 N	03° 44' 53.68939342 W
4,783.00	4.90	212.90	4,771.99	-179.77	-148.26	660,888.58	679,747.06	2° 48' 55.81229408 N	03° 44' 53.73954336 W
4,872.00	5.20	210.40	4,860.64	-186.44	-152.37	660,881.91	679,742.96	2° 48' 55.74651867 N	03° 44' 53.78808229 W
4,917.00	5.20	212.50	4,905.46	-189.91	-154.50	660,878.43	679,740.83	2° 48' 55.71221329 N	03° 44' 53.81323779 W
4,962.00	5.10	211.90	4,950.28	-193.33	-156.65	660,875.01	679,738.68	2° 48' 55.67851111 N	03° 44' 53.83868250 W
5,007.00	5.10	212.80	4,995.10	-196.71	-158.79	660,871.63	679,736.54	2° 48' 55.64519057 N	03° 44' 53.86398177 W
5,051.00	4.90	217.30	5,038.93	-199.85	-160.99	660,868.49	679,734.34	2° 48' 55.61425352 N	03° 44' 53.88994211 W
5,096.00	5.00	213.50	5,083.76	-203.01	-163.23	660,865.33	679,732.09	2° 48' 55.58306834 N	03° 44' 53.91647616 W
5,141.00	5.10	218.10	5,128.59	-206.22	-165.55	660,862.12	679,729.77	2° 48' 55.55144006 N	03° 44' 53.94382763 W
5,185.00	4.80	213.50	5,172.42	-209.30	-167.77	660,859.05	679,727.55	2° 48' 55.52114359 N	03° 44' 53.97007237 W
5,275.00	3.70	208.60	5,262.18	-214.99	-171.24	660,853.36	679,724.08	2° 48' 55.46503322 N	03° 44' 54.01108343 W
5,365.00	2.40	189.20	5,352.05	-219.40	-172.93	660,848.95	679,722.39	2° 48' 55.42148835 N	03° 44' 54.03118925 W
5,454.00	1.00	195.20	5,441.01	-221.99	-173.44	660,846.36	679,721.89	2° 48' 55.39589698 N	03° 44' 54.03723435 W
5,544.00	0.60	310.70	5,531.00	-222.44	-174.00	660,845.91	679,721.33	2° 48' 55.39146899 N	03° 44' 54.04386273 W
5,633.00	0.40	329.10	5,620.00	-221.87	-174.51	660,846.48	679,720.81	2° 48' 55.39714160 N	03° 44' 54.04983473 W
5,722.00	0.40	323.30	5,709.00	-221.35	-174.86	660,846.99	679,720.47	2° 48' 55.40226288 N	03° 44' 54.05384615 W
5,812.00	0.70	297.90	5,798.99	-220.84	-175.53	660,847.50	679,719.79	2° 48' 55.40733763 N	03° 44' 54.06170613 W
5,901.00	0.70	320.40	5,887.99	-220.17	-176.36	660,848.18	679,718.97	2° 48' 55.41404505 N	03° 44' 54.07135281 W
5,991.00	0.60	315.20	5,977.98	-219.41	-177.04	660,848.93	679,718.29	2° 48' 55.42158250 N	03° 44' 54.07930052 W
6,080.00	0.60	319.00	6,066.97	-218.73	-177.67	660,849.62	679,717.65	2° 48' 55.42836898 N	03° 44' 54.08668598 W
6,169.00	0.80	307.40	6,155.97	-218.00	-178.47	660,850.35	679,716.85	2° 48' 55.43562678 N	03° 44' 54.09600446 W
6,259.00	0.20	205.40	6,245.97	-217.76	-179.04	660,850.58	679,716.29	2° 48' 55.43802983 N	03° 44' 54.10262700 W

Company:	ConocoPhillips	Local Co-ordinate Reference:	Well SC Federal 9
Project:	Lea County, New Mexico	TVD Reference:	RKB=3990+13 @ 4003.00usft (PD 822)
Site:	SC Federal	MD Reference:	RKB=3990+13 @ 4003.00usft (PD 822)
Well:	SC Federal 9	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Surveys Original Hole	Database:	EDM 5000.1 Ddatabase

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,304.00	0.80	134.60	6,290.96	-218.05	-178.85	660,850.29	679,716.48	2° 48' 55.43513474 N	03° 44' 54.10041964 W
6,393.00	1.40	135.10	6,379.95	-219.26	-177.64	660,849.09	679,717.69	2° 48' 55.42313126 N	03° 44' 54.08632159 W
6,438.00	1.30	143.90	6,424.93	-220.06	-176.95	660,848.28	679,718.37	2° 48' 55.41515937 N	03° 44' 54.07830265 W
6,527.00	1.00	157.80	6,513.92	-221.59	-176.06	660,846.75	679,719.26	2° 48' 55.39992398 N	03° 44' 54.06799372 W
6,616.00	0.50	127.90	6,602.91	-222.55	-175.46	660,845.79	679,719.86	2° 48' 55.39041560 N	03° 44' 54.06102686 W
6,706.00	0.40	73.60	6,692.91	-222.70	-174.85	660,845.64	679,720.47	2° 48' 55.38887288 N	03° 44' 54.05387454 W
6,795.00	0.40	87.50	6,781.90	-222.60	-174.24	660,845.74	679,721.08	2° 48' 55.38984158 N	03° 44' 54.04673917 W
6,885.00	0.70	64.90	6,871.90	-222.36	-173.43	660,845.99	679,721.89	2° 48' 55.39224034 N	03° 44' 54.03721205 W
6,974.00	0.50	79.10	6,960.90	-222.05	-172.56	660,846.29	679,722.77	2° 48' 55.39520106 N	03° 44' 54.02695552 W
7,052.00	0.20	112.50	7,038.89	-222.04	-172.10	660,846.30	679,723.23	2° 48' 55.39529718 N	03° 44' 54.02156510 W
7,112.00	0.20	112.50	7,098.89	-222.12	-171.90	660,846.22	679,723.42	2° 48' 55.39449352 N	03° 44' 54.01930302 W
Survey projected to 7112.00 MD									

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
870.00	870.00	0.00	0.00	Assume Vertical to 870 MD	
7,112.00	7,098.89	-222.12	-171.90	Survey projected to 7112.00 MD	