

DATE IN 3/17/2015	SUSPENSE	ENGINEER MAM	LOGGED IN 3/17/2015	TYPE NSL	APP NO. DMA1507 4654634
----------------------	----------	-----------------	------------------------	-------------	----------------------------

ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION
- Engineering Bureau -
1220 South St. Francis Drive, Santa Fe, NM 87505



ADMINISTRATIVE APPLICATION CHECKLIST

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Application Acronyms:

[NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]
[DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
[PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
[WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
[SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
[EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

[1] TYPE OF APPLICATION - Check Those Which Apply for [A]

[A] Location - Spacing Unit - Simultaneous Dedication
☐ NSL ☐ NSP ☐ SD

Check One Only for [B] or [C]

[B] Commingling - Storage - Measurement

☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

[C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery

☐ WFX ☐ PMX ☐ SWD ☐ IPI ☐ EOR ☐ PPR

[D] Other: Specify _____

[2] NOTIFICATION REQUIRED TO: - Check Those Which Apply, or Does Not Apply

[A] ☐ Working, Royalty or Overriding Royalty Interest Owners

[B] ☐ Offset Operators, Leascholders or Surface Owner

[C] ☐ Application is One Which Requires Published Legal Notice

[D] ☐ Notification and/or Concurrent Approval by BLM or SLO
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office

[E] ☐ For all of the above, Proof of Notification or Publication is Attached, and/or,

[F] ☐ Waivers are Attached

[3] SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.

[4] **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

Samuel Walker
Print or Type Name

[Signature]
Signature

Landman
Title

3/17/15
Date

Samuel.Walker@dnr.com
e-mail Address

NSL-7249
- Devon Energy Production
Company, L.P.
6137
W 211

- Cotton Draw 14 February

#44

30-015-42505

Pool

- Paducah; Bone
Spring 10)

96641



Samuel Walker
Landman

Devon Energy Production Corp., L.P.
333 West Sheridan
Oklahoma City, Oklahoma 73102
Office: (405) 228-4342
Fax: (405) 234-2634

March 17, 2015

New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, NM 87505
Attn: Gabriel Wade

RE: Cotton Draw 14 Fed 4H
Section 14-T25S-R31E
Eddy County, New Mexico

Gentlemen:

Devon Energy Production Company, L.P. ("Devon"), as Operator, has drilled the referenced horizontal Bone Spring well to a total vertical depth of approximately 10,398' with a total measured depth of approximately 14,745'. As reflected on the attached C-102, the well has been permitted at a surface location of 1,150' FEL and 330' FNL with a permitted bottom hole location of 330' FEL and 330' FSL of Section 14, Township 25 South, Range 31 East. During the drilling of this well, the actual well path inadvertently exceeded the 330' setback for a legal location in the 160 acre project area. Based on Devon's calculations approximately 131' (14,707' MD to 14,838' MD) of the horizontal wellbore is closer than the required 330' setback as required by OCD rules. The point of maximum deviation from the 330' setback occurs at 14,838' MD at which point Devon's wellbore is unorthodox by approximately 15'.

In accordance with Division rules, Devon respectfully requests that the Commission administratively approve this application for an unorthodox location with respect to that portion of the horizontal wellbore as described above in accordance with Division Rule 104(F) (3). This unorthodox location affects no other parties besides Devon and XTO, who are both party to the subject well.

Attached for your review you will find a land plat reflecting Devon and XTO as the only affected parties, a structure map of the top of the Bone Spring formation, a State of New Mexico form C-102, and an Final Well Plot prepared by Halliburton.

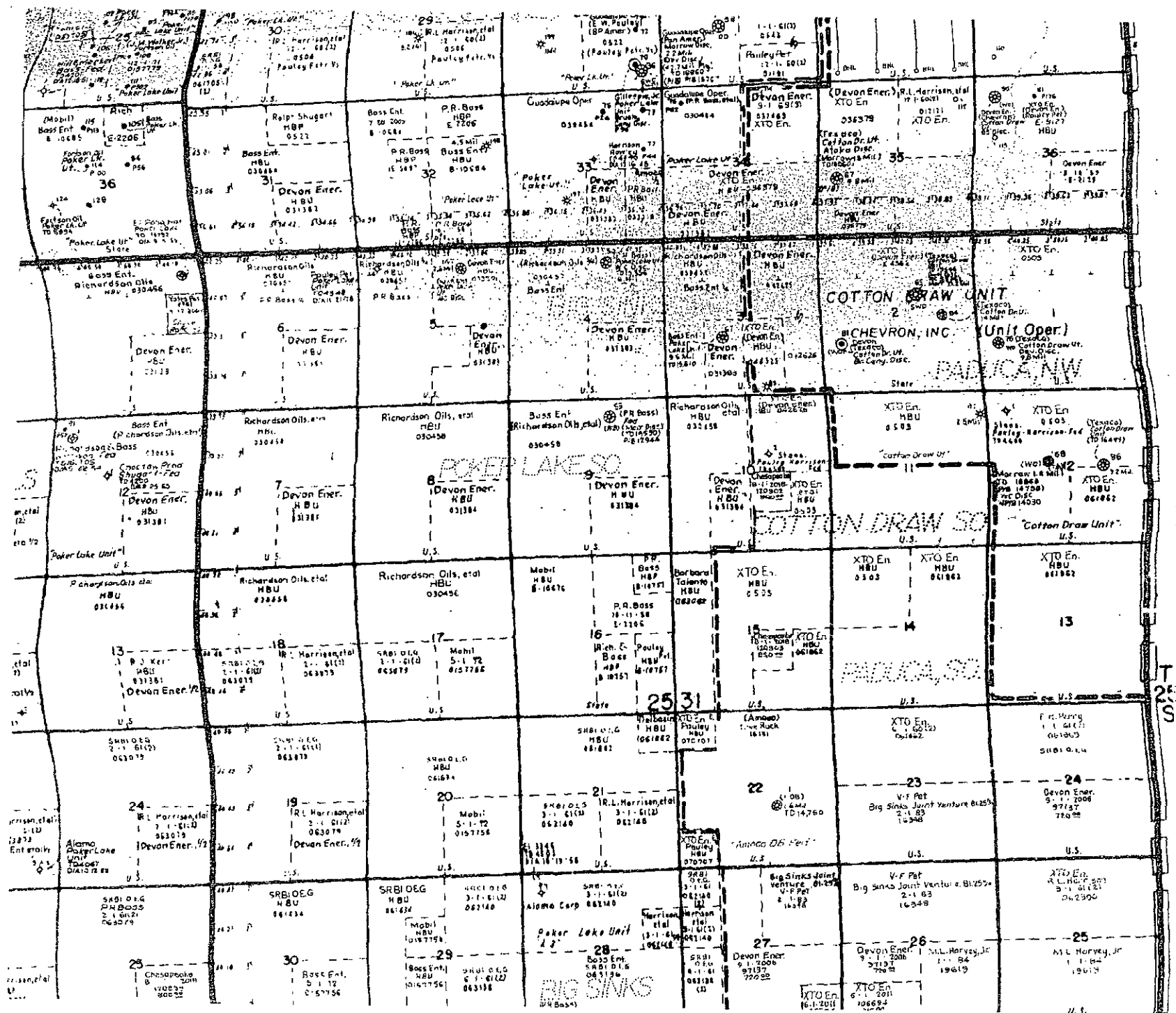
Feel free to contact the undersigned at (405) 228-4342 if there are any concerns or questions regarding this application.

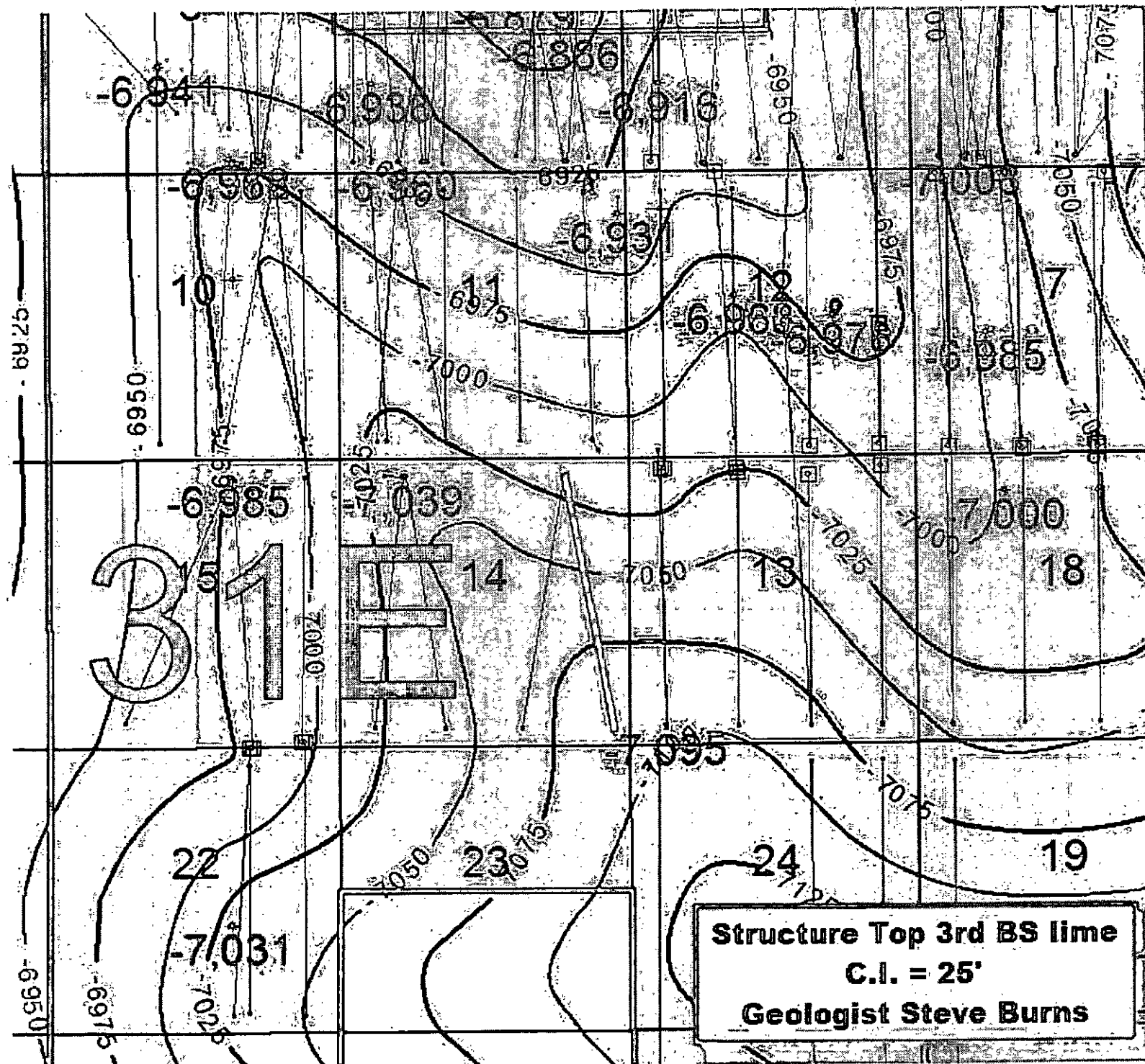
Yours very truly,

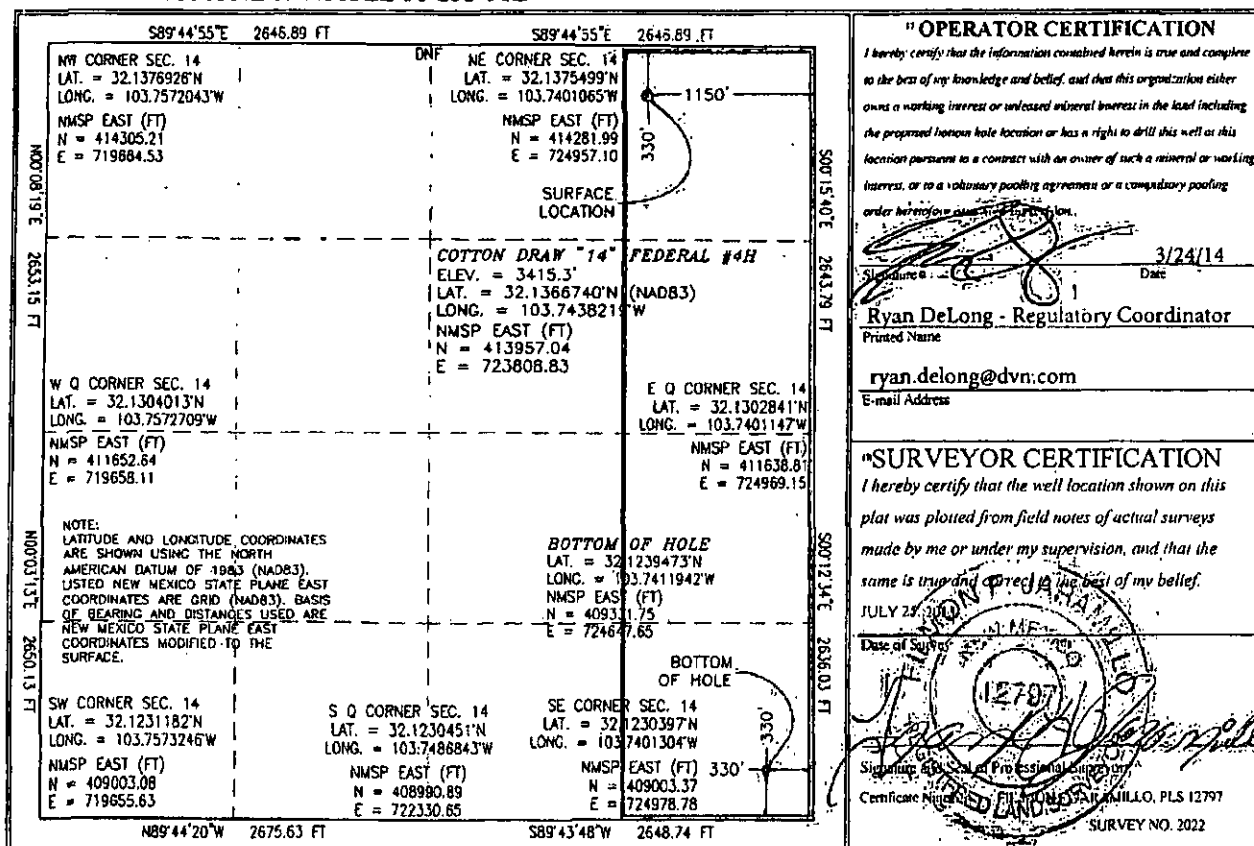
DEVON ENERGY PRODUCTION COMPANY, L.P.

Samuel Walker
Landman

SW\Cotton Draw 14 Fed 4H
Enclosure







Devon

Project: Eddy County, NM (NAD 83)

Site: Sec.14 T. 25 S, R31 E

Well: Cotton Draw 14 Fed 4H

Wellbore: Wellbore #1

Plan: Plan#10 121814 RevA9 (Cotton Draw 14 Fed 4H/Wellbore #1)

HP 212

HALLIBURTON

Sperry Drilling

WELL DETAILS: Cotton Draw 14 Fed 4H

Ground Level: 3415.50
 Northing 413957.04 Easting 723808.83 Latitude 32° 8' 12.026 N Longitude 103° 44' 37.759 W

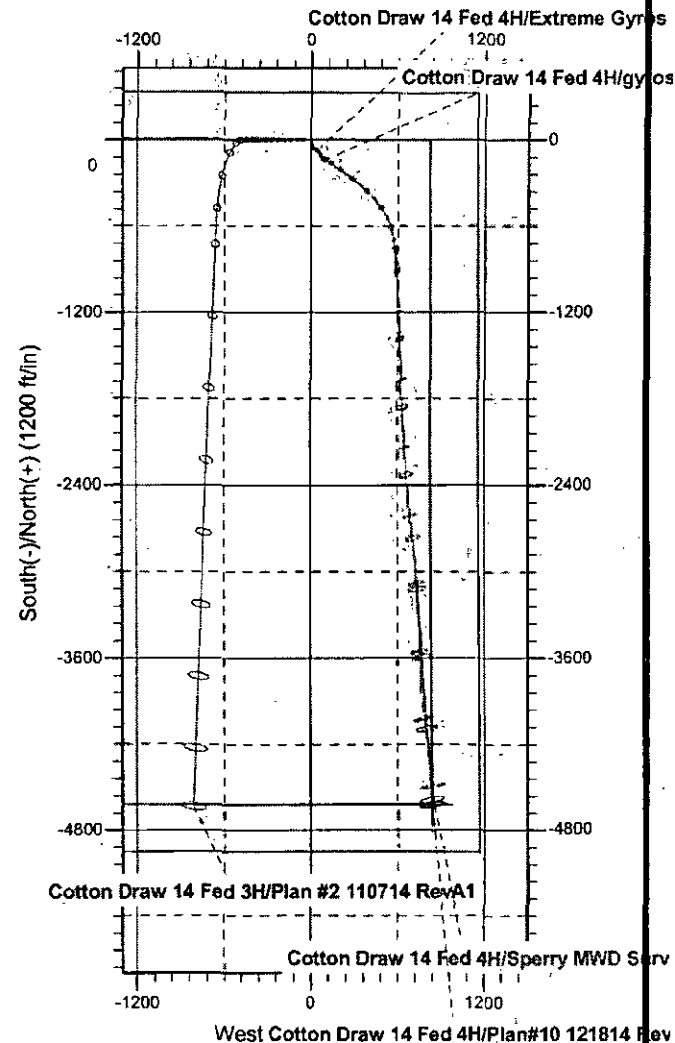
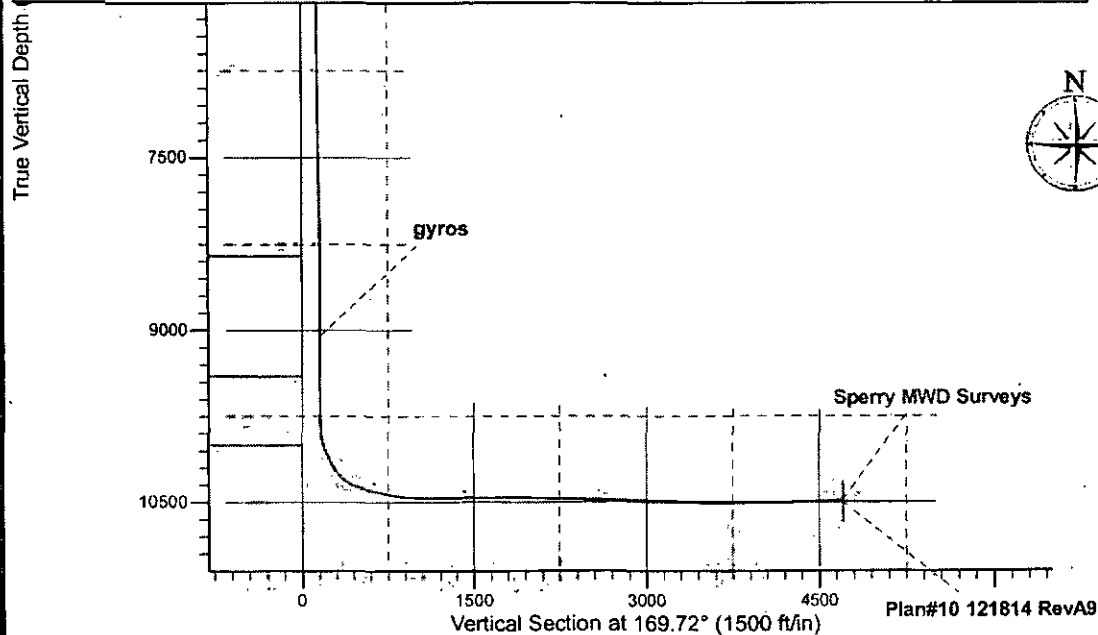
devon

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
12913.00	89.57	172.99	10485.87	-2708.34	696.89	0.00	0.00	2789.23	
12975.00	89.57	172.99	10486.34	-2769.87	704.46	0.00	0.00	2851.12	
13328.62	88.00	176.16	10493.84	-3121.77	737.88	1.00	116.38	3203.34	CD 14 FED 4H BHL
13406.82	88.00	176.16	10496.57	-3199.75	743.12	0.00	0.00	3280.99	
13606.82	90.00	176.16	10500.06	-3399.26	756.51	1.00	0.00	3479.69	CD 14 FED 4H BHL
14835.62	90.00	176.16	10500.06	-4625.30	838.82	0.00	0.00	4700.75	CD 14 FED 4H BHL

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
CD 14 FED 4H BHL	10500.00	-4625.30	838.82	Point



Job# 901845948
HP 212

Devon

Eddy County, NM (NAD 83) Sec.14 T. 25 S, R31 E

API# 30-015-42505

Cotton Draw 14 Fed 4H

330' FNL & 1150' FEL

Wellbore #1

Design: Wellbore #1

Sperry Drilling Services Combo Report

22 December, 2014

Well Coordinates: 32° 08' 12.03" N
103° 44' 37.76" W

North American Datum 1983
New Mexico Eastern Zone
413,957.04 N
723,808.83 E

Ground Level: 3,415.50 ft

Local Coordinate Origin:

Viewing Datum:

TVDs to System:

North Reference:

Unit System:

Centered on Well Cotton Draw 14 Fed 4H

Well @ 3440.50ft (HP 212)

N

Grid

API US Survey Feet

Version: 5000.1 Build: 73

Report Version: Midcon Combo v1.50

HALLIBURTON

Design Report for Cotton Draw 14 Fed 4H - Wellbore #1

Measured Depth (ft)	Inclination (°)	Grid Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (ft)	Comments
					Northing (ft)	Easting (ft)	Northing (usft)	Easting (usft)			
0.00	0.00	0.00	-3,440.50	0.00	0.00 N	0.00 E	413,957.04	723,808.83	0.00	0.00	
153.00	0.31	116.30	-3,287.50	153.00	0.18 S	0.37 E	413,956.86	723,809.20	0.20	0.25	First Gyro Survey
214.00	0.31	102.29	-3,226.50	214.00	0.29 S	0.68 E	413,956.75	723,809.51	0.12	0.41	
301.00	0.30	158.18	-3,139.50	301.00	0.55 S	0.99 E	413,956.49	723,809.82	0.33	0.72	
397.00	0.40	129.09	-3,043.50	397.00	1.00 S	1.35 E	413,956.04	723,810.18	0.21	1.22	
490.00	0.40	135.29	-2,950.51	489.99	1.43 S	1.83 E	413,955.61	723,810.66	0.05	1.74	
584.00	0.60	140.30	-2,856.51	583.99	2.05 S	2.37 E	413,954.99	723,811.20	0.22	2.44	
764.00	0.88	142.30	-2,676.53	763.97	3.86 S	3.82 E	413,953.18	723,812.65	0.16	4.48	
857.00	1.01	167.41	-2,583.54	856.96	5.23 S	4.44 E	413,951.81	723,813.27	0.46	5.94	
951.00	1.10	173.52	-2,489.55	950.95	6.93 S	4.72 E	413,950.11	723,813.55	0.15	7.66	
1,045.00	1.32	178.31	-2,395.57	1,044.93	8.91 S	4.85 E	413,948.13	723,813.68	0.26	9.64	
1,142.00	1.41	174.31	-2,298.60	1,141.90	11.22 S	5.00 E	413,945.82	723,813.83	0.14	11.93	
1,236.00	1.41	172.69	-2,204.63	1,235.87	13.51 S	5.27 E	413,943.53	723,814.10	0.04	14.24	
1,331.00	1.49	173.08	-2,109.66	1,330.84	15.90 S	5.56 E	413,941.14	723,814.39	0.08	16.64	
1,426.00	1.49	171.89	-2,014.69	1,425.81	18.35 S	5.89 E	413,938.69	723,814.72	0.03	19.11	
1,520.00	1.41	173.92	-1,920.72	1,519.78	20.71 S	6.18 E	413,936.33	723,815.01	0.10	21.48	
1,615.00	1.49	171.02	-1,825.75	1,614.75	23.09 S	6.50 E	413,933.95	723,815.33	0.11	23.88	
1,709.00	1.49	162.58	-1,731.79	1,708.71	25.46 S	7.05 E	413,931.58	723,815.88	0.23	26.31	
1,803.00	1.58	163.90	-1,637.82	1,802.68	27.88 S	7.78 E	413,929.16	723,816.61	0.10	28.82	
1,898.00	1.49	166.67	-1,542.85	1,897.65	30.34 S	8.43 E	413,926.70	723,817.26	0.12	31.35	
1,992.00	1.41	166.09	-1,448.88	1,991.62	32.65 S	8.99 E	413,924.39	723,817.82	0.09	33.73	
2,082.00	1.41	159.59	-1,358.91	2,081.59	34.76 S	9.64 E	413,922.28	723,818.47	0.18	35.92	
2,177.00	1.41	157.30	-1,263.94	2,176.56	36.93 S	10.50 E	413,920.11	723,819.33	0.06	38.21	
2,276.00	1.32	156.60	-1,164.97	2,275.53	39.10 S	11.42 E	413,917.94	723,820.25	0.09	40.51	
2,368.00	1.19	163.50	-1,074.99	2,365.51	40.95 S	12.10 E	413,916.09	723,820.93	0.22	42.45	
2,461.00	1.41	178.31	-980.01	2,460.49	43.07 S	12.41 E	413,913.97	723,821.24	0.42	44.59	
2,557.00	1.41	177.08	-884.04	2,556.46	45.43 S	12.51 E	413,911.61	723,821.34	0.03	46.93	
2,655.00	1.19	185.08	-786.07	2,654.43	47.64 S	12.48 E	413,909.40	723,821.31	0.29	49.11	
2,750.00	1.01	187.80	-691.08	2,749.42	49.46 S	12.28 E	413,907.58	723,821.11	0.20	50.85	
2,845.00	0.88	179.19	-596.10	2,844.40	51.01 S	12.18 E	413,906.03	723,821.01	0.20	52.37	
2,934.00	0.79	173.78	-507.11	2,933.39	52.31 S	12.25 E	413,904.73	723,821.08	0.13	53.65	
3,029.00	0.79	147.81	-412.12	3,028.38	53.51 S	12.67 E	413,903.53	723,821.50	0.37	54.92	
3,126.00	0.79	141.40	-315.13	3,125.37	54.60 S	13.44 E	413,902.44	723,822.27	0.09	56.12	
3,220.00	1.00	131.40	-221.14	3,219.36	55.65 S	14.46 E	413,901.39	723,823.29	0.28	57.34	
3,318.00	1.41	129.10	-123.16	3,317.34	58.98 S	16.04 E	413,900.06	723,824.87	0.42	58.93	
3,413.00	1.32	128.61	-28.19	3,412.31	58.40 S	17.80 E	413,898.64	723,826.63	0.10	60.64	
3,508.00	1.32	123.82	66.79	3,507.29	59.69 S	19.57 E	413,897.35	723,828.40	0.12	62.22	
3,602.00	1.01	126.28	160.77	3,601.27	60.78 S	21.14 E	413,896.26	723,829.96	0.33	63.58	
3,696.00	1.19	122.28	254.75	3,695.25	61.79 S	22.63 E	413,895.25	723,831.46	0.21	64.84	
3,791.00	2.02	123.51	349.71	3,790.21	63.24 S	24.86 E	413,893.80	723,833.69	0.87	66.67	
3,885.00	2.02	125.49	443.66	3,884.16	65.12 S	27.59 E	413,891.92	723,836.42	0.07	69.00	

Design Report for Cotton Draw 14 Fed 4H - Wellbore #1

Measured Depth (ft)	Inclination (°)	Grid Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (ft)	Comments
					Northing (ft)	Easting (ft)	Northing (usft)	Easting (usft)			
3,980.00	2.59	132.78	538.58	3,979.08	67.55 S	30.53 E	413,889.49	723,839.36	0.67	71.91	
4,072.00	3.21	136.21	630.46	4,070.96	70.82 S	33.84 E	413,886.22	723,842.67	0.70	75.72	
4,166.00	3.52	138.98	724.30	4,164.80	74.90 S	37.55 E	413,882.14	723,846.38	0.37	80.40	
4,429.00	2.50	143.59	986.93	4,427.43	85.61 S	46.25 E	413,871.43	723,855.08	0.40	92.49	
4,523.00	2.29	143.59	1,080.85	4,521.35	88.77 S	48.59 E	413,868.27	723,857.42	0.22	96.01	
4,618.00	2.20	146.01	1,175.78	4,616.28	91.81 S	50.73 E	413,865.23	723,859.56	0.14	99.39	
4,712.00	2.20	145.79	1,269.71	4,710.21	94.80 S	52.75 E	413,862.24	723,861.58	0.01	102.69	
4,806.00	2.29	138.32	1,363.64	4,804.14	97.69 S	55.02 E	413,859.35	723,863.85	0.33	105.94	
4,901.00	2.20	139.29	1,458.56	4,899.06	100.49 S	57.47 E	413,856.55	723,866.30	0.10	109.13	
4,995.00	2.11	145.70	1,552.50	4,993.00	103.29 S	59.62 E	413,853.75	723,868.45	0.27	112.27	
5,088.00	2.20	139.99	1,645.43	5,085.93	106.07 S	61.73 E	413,850.97	723,870.56	0.25	115.38	
5,182.00	1.82	144.69	1,739.37	5,179.87	108.67 S	63.76 E	413,848.37	723,872.59	0.44	118.30	
5,276.00	1.58	142.10	1,833.33	5,273.83	110.91 S	65.42 E	413,846.13	723,874.25	0.27	120.80	
5,371.00	1.49	143.42	1,928.30	5,368.80	112.93 S	66.96 E	413,844.11	723,875.79	0.10	123.07	
5,465.00	1.19	140.69	2,022.27	5,462.77	114.67 S	68.30 E	413,842.37	723,877.13	0.33	125.02	
5,559.00	1.19	147.10	2,116.25	5,556.75	116.25 S	69.45 E	413,840.79	723,878.28	0.14	126.77	
5,656.00	1.10	141.40	2,213.23	5,653.73	117.82 S	70.58 E	413,839.22	723,879.41	0.15	128.52	
5,748.00	1.01	140.39	2,305.22	5,745.72	119.13 S	71.65 E	413,837.91	723,880.48	0.10	130.01	
5,843.00	0.88	143.81	2,400.20	5,840.70	120.37 S	72.61 E	413,836.67	723,881.44	0.15	131.39	
5,937.00	0.79	144.12	2,494.19	5,934.69	121.48 S	73.42 E	413,835.56	723,882.25	0.10	132.63	
6,031.00	0.62	144.39	2,588.19	6,028.69	122.41 S	74.09 E	413,834.63	723,882.92	0.18	133.67	
6,125.00	0.62	148.12	2,682.18	6,122.68	123.26 S	74.66 E	413,833.78	723,883.49	0.04	134.60	
6,219.00	0.70	159.90	2,776.18	6,216.68	124.23 S	75.12 E	413,832.81	723,883.95	0.17	135.64	
6,313.00	0.62	169.22	2,870.17	6,310.67	125.27 S	75.42 E	413,831.77	723,884.25	0.14	136.72	
6,407.00	0.48	170.40	2,964.16	6,404.66	126.16 S	75.58 E	413,830.88	723,884.41	0.15	137.62	
6,501.00	0.48	161.22	3,058.16	6,498.66	126.92 S	75.77 E	413,830.12	723,884.60	0.08	138.40	
6,596.00	0.62	152.52	3,153.16	6,593.66	127.75 S	76.14 E	413,829.29	723,884.97	0.17	139.29	
6,694.00	0.48	147.68	3,251.15	6,691.65	128.57 S	76.60 E	413,828.47	723,885.43	0.15	140.17	
6,788.00	0.40	126.10	3,345.15	6,785.65	129.09 S	77.08 E	413,827.95	723,885.90	0.19	140.78	
6,883.00	0.62	121.40	3,440.15	6,880.65	129.56 S	77.78 E	413,827.48	723,886.61	0.24	141.36	
6,977.00	0.70	114.59	3,534.14	6,974.64	130.06 S	78.74 E	413,826.98	723,887.57	0.12	142.03	
7,091.00	0.70	126.41	3,648.13	7,088.83	130.76 S	79.93 E	413,826.28	723,888.76	0.13	142.93	
7,166.00	0.70	135.42	3,723.13	7,163.83	131.36 S	80.62 E	413,825.68	723,889.45	0.15	143.84	
7,260.00	0.62	148.78	3,817.12	7,257.62	132.21 S	81.29 E	413,824.83	723,890.12	0.18	144.59	
7,354.00	0.48	144.69	3,911.12	7,351.62	132.96 S	81.78 E	413,824.08	723,890.61	0.15	145.42	
7,449.00	0.48	143.90	4,006.11	7,446.61	133.61 S	82.24 E	413,823.43	723,891.07	0.01	146.14	
7,543.00	0.70	132.61	4,100.11	7,540.61	134.32 S	82.90 E	413,822.72	723,891.73	0.26	146.95	
7,638.00	0.79	133.31	4,195.10	7,635.60	135.16 S	83.80 E	413,821.88	723,892.63	0.10	147.94	
7,732.00	0.88	131.11	4,289.09	7,729.59	136.08 S	84.82 E	413,820.96	723,893.65	0.10	149.03	
7,825.00	1.10	136.39	4,382.07	7,822.57	137.19 S	85.97 E	413,819.85	723,894.80	0.26	150.33	
7,919.00	0.88	142.32	4,476.06	7,916.56	138.42 S	87.04 E	413,818.62	723,895.86	0.26	151.73	

Design Report for Cotton Draw 14 Fed 4H - Wellbore #1

Measured Depth (ft)	Inclination (°)	Grid Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (ft)	Comments
					Northing (ft)	Easting (ft)	Northing (usft)	Easting (usft)			
8,013.00	0.79	143.99	4,570.05	8,010.55	139.51 S	87.86 E	413,817.53	723,896.69	0.10	152.95	
8,107.00	0.70	136.39	4,664.04	8,104.54	140.45 S	88.63 E	413,816.59	723,897.46	0.14	154.02	
8,202.00	0.70	142.19	4,759.04	8,199.54	141.33 S	89.39 E	413,815.71	723,898.22	0.07	155.02	
8,296.00	0.48	146.49	4,853.03	8,293.53	142.11 S	89.96 E	413,814.93	723,898.79	0.24	155.89	
8,390.00	0.31	144.52	4,947.03	8,387.53	142.65 S	90.32 E	413,814.39	723,899.15	0.18	156.48	
8,484.00	0.09	139.90	5,041.03	8,481.53	142.91 S	90.52 E	413,814.13	723,899.35	0.23	156.77	
8,582.00	0.09	352.82	5,139.03	8,579.53	142.90 S	90.56 E	413,814.14	723,899.39	0.18	156.76	
8,677.00	0.22	102.99	5,234.03	8,674.53	142.86 S	90.73 E	413,814.18	723,899.56	0.28	156.76	
8,771.00	0.40	97.10	5,328.03	8,768.53	142.94 S	91.23 E	413,814.10	723,900.06	0.19	156.93	
8,856.00	0.40	32.50	5,413.02	8,853.52	142.73 S	91.68 E	413,814.31	723,900.51	0.50	156.80	
8,960.00	0.40	23.40	5,517.02	8,957.52	142.09 S	92.02 E	413,814.95	723,900.85	0.06	156.23	
9,055.00	1.01	356.51	5,612.01	9,052.51	140.95 S	92.10 E	413,816.09	723,900.93	0.71	155.12	Final Gyro Survey
9,136.00	1.35	355.11	5,693.00	9,133.50	139.29 S	91.98 E	413,817.75	723,900.81	0.42	153.47	First Sperry MWD Survey
9,231.00	0.55	11.51	5,787.98	9,228.48	137.73 S	91.97 E	413,819.31	723,900.80	0.88	151.93	
9,325.00	0.40	79.73	5,881.98	9,322.48	137.22 S	92.39 E	413,819.82	723,901.22	0.58	151.51	
9,420.00	0.49	55.68	5,976.98	9,417.48	136.94 S	93.05 E	413,820.10	723,901.88	0.22	151.34	
9,514.00	0.44	14.06	6,070.98	9,511.48	136.36 S	93.47 E	413,820.68	723,902.30	0.35	150.85	
9,609.00	0.36	32.32	6,165.97	9,606.47	135.75 S	93.72 E	413,821.29	723,902.55	0.16	150.30	
9,703.00	0.53	63.56	6,259.97	9,700.47	135.31 S	94.26 E	413,821.73	723,903.09	0.31	149.96	
9,734.00	0.76	138.49	6,290.97	9,731.47	135.40 S	94.53 E	413,821.64	723,903.36	2.60	150.10	
9,766.00	2.03	121.90	6,322.96	9,763.46	135.86 S	95.15 E	413,821.18	723,903.98	4.12	150.66	
9,797.00	3.97	120.44	6,353.91	9,794.41	136.69 S	96.54 E	413,820.35	723,905.37	6.26	151.73	
9,829.00	5.92	123.08	6,385.79	9,826.29	138.16 S	98.88 E	413,818.89	723,907.71	6.13	153.58	
9,860.00	8.36	123.65	6,416.55	9,857.05	140.28 S	102.10 E	413,816.78	723,910.93	7.87	156.25	
9,892.00	10.57	125.98	6,448.11	9,888.61	143.29 S	106.41 E	413,813.75	723,915.24	7.01	159.98	
9,923.00	14.01	126.00	6,478.40	9,918.90	147.17 S	111.75 E	413,809.87	723,920.58	11.10	164.75	
9,955.00	17.14	124.76	6,509.22	9,949.72	152.13 S	118.78 E	413,804.91	723,927.59	9.84	170.89	
9,986.00	20.20	126.49	6,538.59	9,979.09	157.92 S	126.81 E	413,799.12	723,935.64	10.03	178.02	
10,018.00	23.57	128.06	6,568.28	10,008.78	165.15 S	136.30 E	413,791.89	723,945.13	10.69	186.83	
10,049.00	25.82	127.90	6,596.46	10,036.96	173.09 S	146.47 E	413,783.95	723,955.29	6.62	196.45	
10,080.00	28.90	128.61	6,624.01	10,064.51	181.89 S	157.61 E	413,775.15	723,966.44	10.63	207.09	
10,112.00	30.97	126.16	6,651.75	10,092.25	191.57 S	170.30 E	413,765.47	723,979.13	7.51	218.89	
10,143.00	31.82	125.75	6,678.21	10,118.71	201.05 S	183.37 E	413,755.99	723,992.20	2.83	230.55	
10,175.00	34.60	126.00	6,704.98	10,145.48	211.32 S	197.57 E	413,745.72	724,006.40	8.70	243.19	
10,207.00	37.33	126.13	6,730.87	10,171.37	222.39 S	212.76 E	413,734.65	724,021.59	8.53	256.79	
10,238.00	39.92	126.64	6,755.09	10,195.59	233.87 S	228.34 E	413,723.17	724,037.17	8.42	270.86	
10,270.00	42.12	126.88	6,779.23	10,219.73	246.44 S	245.16 E	413,710.60	724,053.99	6.89	286.23	
10,301.00	45.09	127.25	6,801.68	10,242.18	259.32 S	262.22 E	413,697.72	724,071.05	9.62	301.96	
10,333.00	49.21	127.24	6,823.44	10,263.94	273.52 S	280.89 E	413,683.52	724,089.72	12.88	319.26	
10,365.00	53.60	127.92	6,843.39	10,283.89	288.77 S	300.71 E	413,668.27	724,109.53	13.82	337.80	
10,396.00	58.14	128.55	6,860.78	10,301.28	304.65 S	320.85 E	413,652.39	724,129.68	14.74	357.02	

HALLIBURTON

Eddy County, NM (NAD 83)

Design Report for Cotton Draw 14 Fed 4H - Wellbore #1

1st
2nd →

Measured Depth (ft)	Inclination (°)	Grid Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (ft)	Comments
					Northing (ft)	Easting (ft)	Northing (usft)	Easting (usft)			
10,427.00	62.81	128.78	6,876.06	10,316.56	321.50 S	341.91 E	413,635.54	724,150.74	15.08	377.36	
10,459.00	65.48	131.23	6,890.01	10,330.51	340.01 S	363.96 E	413,617.03	724,172.79	10.82	399.51	
10,491.00	67.76	134.18	6,902.71	10,343.21	359.94 S	385.53 E	413,597.10	724,194.36	11.06	422.96	
10,522.00	70.66	137.11	6,913.71	10,354.21	380.66 S	405.78 E	413,576.38	724,214.61	12.87	446.96	
10,554.00	73.00	139.77	6,923.69	10,364.19	403.41 S	425.95 E	413,553.63	724,234.78	10.76	472.95	
10,584.00	74.99	141.26	6,931.97	10,372.47	425.66 S	444.28 E	413,531.38	724,253.11	8.17	498.12	
10,616.00	76.20	143.05	6,939.93	10,380.43	450.14 S	463.30 E	413,506.90	724,272.12	6.61	525.59	
10,648.00	76.12	144.36	6,947.58	10,388.08	475.18 S	481.69 E	413,481.86	724,290.52	3.98	553.51	
10,679.00	76.20	147.08	6,955.00	10,395.50	500.05 S	498.64 E	413,456.99	724,307.47	8.52	581.01	
10,711.00	76.46	150.70	6,962.56	10,403.06	526.67 S	514.70 E	413,430.38	724,323.53	11.02	610.06	
10,742.00	77.73	154.56	6,969.49	10,409.99	553.49 S	528.59 E	413,403.55	724,337.42	12.81	638.94	
10,774.00	79.25	158.11	6,975.88	10,416.38	582.21 S	541.17 E	413,374.83	724,350.00	11.86	669.44	
10,805.00	79.58	162.67	6,981.57	10,422.07	610.91 S	551.39 E	413,346.13	724,360.22	14.50	699.50	
10,837.00	79.92	166.05	6,987.27	10,427.77	641.23 S	559.88 E	413,315.82	724,368.71	10.45	730.85	
10,868.00	80.42	169.28	6,992.56	10,433.06	671.06 S	566.40 E	413,285.98	724,375.23	10.39	761.37	
10,899.00	79.90	171.90	6,997.86	10,438.36	701.19 S	571.40 E	413,255.85	724,380.23	8.49	791.91	
10,931.00	79.72	173.77	7,003.52	10,444.02	732.44 S	575.33 E	413,224.60	724,384.15	5.78	823.35	
10,962.00	80.86	174.95	7,008.75	10,449.25	762.85 S	578.33 E	413,194.20	724,387.16	5.25	853.81	
10,994.00	82.23	175.58	7,013.46	10,453.96	794.39 S	580.94 E	413,182.65	724,389.77	4.70	885.31	
11,025.00	85.25	176.09	7,016.84	10,457.34	825.12 S	583.18 E	413,131.92	724,392.01	9.88	915.95	
11,057.00	86.70	176.56	7,019.08	10,459.58	856.97 S	585.22 E	413,100.07	724,394.05	4.76	947.66	
11,088.00	87.44	176.50	7,020.67	10,461.17	887.88 S	587.10 E	413,069.17	724,395.93	2.39	978.40	
11,120.00	88.00	176.76	7,021.94	10,462.44	919.80 S	588.98 E	413,037.25	724,397.81	1.93	1,010.14	
11,214.00	88.61	176.86	7,024.72	10,465.22	1,013.61 S	594.21 E	412,943.43	724,403.03	0.66	1,103.38	
11,308.00	90.09	176.96	7,025.79	10,466.29	1,107.46 S	599.27 E	412,849.58	724,408.10	1.58	1,196.63	
11,403.00	89.51	177.61	7,026.12	10,466.62	1,202.36 S	603.77 E	412,754.69	724,412.60	0.92	1,290.80	
11,497.00	90.28	178.14	7,026.29	10,466.79	1,296.29 S	607.26 E	412,660.75	724,416.09	0.99	1,383.85	
11,591.00	92.03	178.60	7,024.40	10,464.90	1,390.23 S	609.93 E	412,566.81	724,418.76	1.92	1,476.76	
11,686.00	91.97	177.50	7,021.08	10,461.58	1,485.11 S	613.16 E	412,471.93	724,421.99	1.16	1,570.70	
11,780.00	91.60	177.06	7,018.15	10,458.65	1,578.96 S	617.62 E	412,378.08	724,426.45	0.61	1,663.84	
11,875.00	89.97	177.73	7,016.85	10,457.35	1,673.85 S	621.94 E	412,283.19	724,430.77	1.86	1,757.97	
11,969.00	88.55	176.75	7,018.07	10,458.57	1,767.73 S	626.46 E	412,189.31	724,435.29	1.84	1,851.15	
12,064.00	88.77	176.68	7,020.29	10,460.79	1,862.55 S	631.90 E	412,094.49	724,440.73	0.24	1,945.42	
12,158.00	88.27	177.12	7,022.72	10,463.22	1,958.38 S	636.99 E	412,000.66	724,445.81	0.71	2,038.65	
12,252.00	86.82	176.09	7,026.74	10,467.24	2,050.12 S	642.55 E	411,906.92	724,451.38	1.89	2,131.88	
12,346.00	87.13	176.26	7,031.70	10,472.20	2,143.78 S	648.81 E	411,813.26	724,457.64	0.38	2,225.16	
12,441.00	90.52	176.87	7,033.65	10,474.15	2,238.58 S	654.50 E	411,718.47	724,463.33	3.63	2,319.45	
12,536.00	89.23	176.29	7,033.86	10,474.36	2,333.41 S	660.17 E	411,623.64	724,468.99	1.49	2,413.76	
12,630.00	88.37	175.61	7,035.83	10,476.33	2,427.15 S	666.80 E	411,529.89	724,475.63	1.17	2,507.19	
12,724.00	86.70	173.58	7,039.87	10,480.37	2,520.64 S	675.65 E	411,436.41	724,484.48	2.79	2,600.75	
12,818.00	88.52	173.80	7,043.79	10,484.29	2,613.98 S	685.97 E	411,343.06	724,494.80	1.95	2,694.44	

Design Report for Cotton Draw 14 Fed 4H - Wellbore #1

Measured Depth (ft)	Inclination (°)	Grid Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Local Coordinates Easting (ft)	Map Coordinates Northing (usft)	Map Coordinates Easting (usft)	Dogleg Rate (°/100usft)	Vertical Section (ft)	Comments
12,913.00	89.57	172.99	7,045.37	10,485.87	2,708.34 S	696.89 E	411,248.71	724,505.72	1.40	2,789.23	
13,008.00	89.51	173.96	7,046.14	10,486.64	2,802.72 S	707.69 E	411,154.33	724,516.52	1.02	2,884.02	
13,102.00	88.28	174.87	7,047.95	10,488.45	2,896.25 S	716.84 E	411,060.79	724,525.66	1.63	2,977.69	
13,197.00	88.21	176.26	7,050.86	10,491.36	2,990.92 S	724.18 E	410,968.13	724,533.01	1.46	3,072.14	
13,291.00	87.32	176.93	7,054.52	10,495.02	3,084.68 S	729.76 E	410,872.38	724,538.59	1.18	3,165.40	
13,386.00	87.28	176.90	7,059.00	10,499.50	3,179.44 S	734.86 E	410,777.61	724,543.69	0.05	3,259.54	
13,480.00	87.56	176.57	7,063.23	10,503.73	3,273.19 S	740.21 E	410,683.86	724,549.04	0.46	3,352.75	
13,574.00	87.78	177.15	7,067.05	10,507.55	3,366.97 S	745.36 E	410,590.08	724,554.19	0.66	3,445.94	
13,669.00	88.15	177.66	7,070.43	10,510.93	3,461.81 S	749.66 E	410,495.23	724,558.48	0.66	3,540.03	
13,763.00	88.27	177.31	7,073.36	10,513.86	3,555.68 S	753.78 E	410,401.37	724,562.61	0.39	3,633.12	
13,858.00	91.39	177.82	7,073.64	10,514.14	3,650.58 S	757.81 E	410,306.47	724,566.64	3.33	3,727.22	
13,952.00	92.28	178.02	7,070.63	10,511.13	3,744.47 S	761.22 E	410,212.58	724,570.05	0.97	3,820.21	
14,046.00	91.20	178.05	7,067.78	10,508.28	3,838.29 S	766.08 E	410,118.75	724,574.91	2.39	3,913.39	
14,141.00	92.10	174.26	7,065.04	10,505.54	3,932.91 S	774.10 E	410,024.14	724,582.93	2.11	4,007.92	
14,235.00	89.81	172.77	7,063.48	10,503.98	4,026.29 S	784.72 E	409,930.76	724,593.55	2.91	4,101.69	
14,330.00	89.63	172.33	7,063.94	10,504.44	4,120.48 S	797.04 E	409,836.57	724,605.88	0.50	4,196.58	
14,424.00	91.60	171.71	7,062.93	10,503.43	4,213.56 S	810.08 E	409,743.49	724,618.91	2.20	4,290.49	
14,518.00	91.73	172.65	7,060.20	10,500.70	4,306.65 S	822.87 E	409,650.40	724,631.70	1.01	4,384.36	
14,613.00	91.51	174.22	7,057.51	10,498.01	4,400.98 S	833.73 E	409,558.06	724,642.55	1.67	4,479.12	
14,707.00	93.21	174.84	7,053.64	10,494.14	4,494.47 S	842.68 E	409,462.58	724,651.51	1.92	4,572.71	
14,775.00	94.29	174.70	7,049.20	10,489.70	4,582.04 S	848.86 E	409,395.01	724,657.69	1.60	4,640.30	Final Sperry MWD Survey
14,838.00	94.29	174.70	7,044.48	10,484.98	4,624.60 S	854.67 E	409,332.45	724,663.49	0.00	4,702.88	Final Sperry MWD Survey

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
153.00	153.00	-0.18	0.37	First Gyro Survey
9,055.00	9,052.51	-140.95	92.10	Final Gyro Survey
9,136.00	9,133.50	-139.29	91.98	First Sperry MWD Survey
14,775.00	10,489.70	-4,582.04	848.86	Final Sperry MWD Survey
14,838.00	10,484.98	-4,624.60	854.67	Final Sperry MWD Survey

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/-S (ft)	Origin +E/-W (ft)	Start TVD (ft)
User	No Target (Freehand)	189.72	Slot	0.00	0.00	0.00

Design Report for Cotton Draw 14 Fed 4H - Wellbore #1

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
153.00	4,166.00	Extreme Gyros	EMS
4,429.00	9,055.00	gyros	EMS
9,136.00	14,838.00	Sperry MWD Surveys	MWD

Design Targets

Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	()	()	()	.0	()	()	()		
- Shape									
()									

Directional Difficulty Index

Average Dogleg over Survey:	1.32 °/100usft	Maximum Dogleg over Survey:	15.08 °/100usft at 10,427.00 ft
Net Tortousity applicable to Plans:	0.14 °/100usft	Directional Difficulty Index:	6.131

Audit Info

SAP=346244

North Reference Sheet for Sec.14 T. 25 S, R31 E - Cotton Draw 14 Fed 4H - Wellbore #1

All data is in Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to Well @ 3440.50ft (HP 212). Northing and Easting are relative to Cotton Draw 14 Fed 4H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Transverse Mercator (Gauss-Kruger)

Central Meridian is 104° 20' 0.000 W°, Longitude Origin: 0° 0' 0.000 E°, Latitude Origin: 0° 0' 0.000 N°

False Easting: 541,337.50usft, False Northing: 0.00usft, Scale Reduction: 0.99994723

Grid Coordinates of Well: 413,957.04 usft N, 723,808.83 usft E

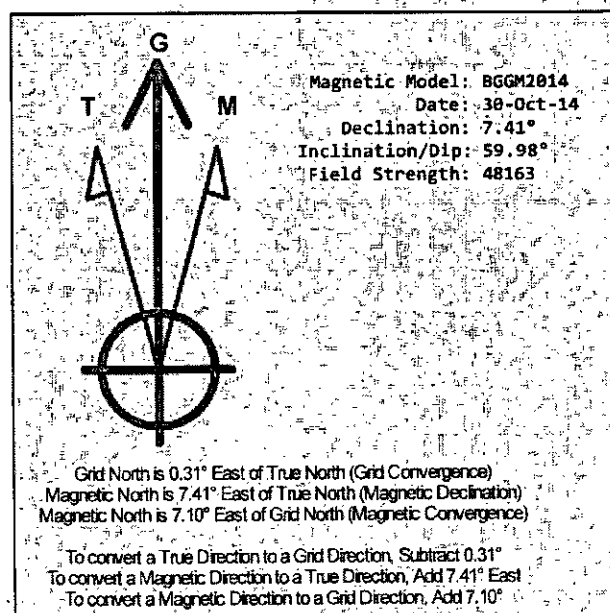
Geographical Coordinates of Well: 32° 08' 12.03" N, 103° 44' 37.76" W

Grid Convergence at Surface is: 0.31°

Based upon Minimum Curvature type calculations, at a Measured Depth of 14,838.00ft

the Bottom Hole Displacement is 4,702.91ft in the Direction of 169.53° (Grid).

Magnetic Convergence at surface is: -7.10° (30 October 2014, , BGGM2014)



#44

I/A

	Cluster	Perf Interval	# Holes	CFP Depth	Phasing	
Stage 1	1	14,771' - 773'	12		6 SPF 60° 48 holes	67'
	2	14,704' - 706'	12			67'
	3	14,636' - 638'	12			67'
	4	14,569' - 571'	12			67'
Stage 2	5	14,501' - 503'	12	14536	6 SPF 60° 48 holes	67'
	6	14,434' - 436'	12			67'
	7	14,366' - 368'	12			67'
	8	14,299' - 301'	12			67'
Stage 3	9	14,231' - 233'	12	14266	6 SPF 60° 48 holes	67'
	10	14,164' - 166'	12			67'
	11	14,097' - 099'	12			67'
	12	14,029' - 031'	12			67'
Stage 4	13	13,962' - 964'	12	13996	6 SPF 60° 48 holes	67'
	14	13,894' - 896'	12			67'
	15	13,827' - 829'	12			67'
	16	13,759' - 761'	12			67'
Stage 5	17	13,692' - 694'	12	13727	6 SPF 60° 48 holes	67'
	18	13,624' - 626'	12			67'
	19	13,557' - 559'	12			67'
	20	13,490' - 492'	12			67'
Stage 6	21	13,422' - 424'	12	13457	6 SPF 60° 48 holes	67'
	22	13,355' - 357'	12			67'
	23	13,287' - 289'	12			67'
	24	13,220' - 222'	12			67'
Stage 7	25	13,152' - 154'	12	13187	6 SPF 60° 48 holes	67'
	26	13,085' - 087'	12			67'
	27	13,017' - 019'	12			67'
	28	12,950' - 952'	12			67'
Stage 8	29	12,883' - 885'	12	12917	6 SPF 60° 48 holes	67'
	30	12,815' - 817'	12			67'
	31	12,748' - 750'	12			67'
	32	12,680' - 682'	12			67'
Stage 9	33	12,613' - 615'	12	12648	6 SPF 60° 48 holes	67'
	34	12,545' - 547'	12			67'
	35	12,478' - 480'	12			67'
	36	12,410' - 412'	12			67'
Stage 10	37	12,343' - 345'	12	12378	6 SPF 60° 48 holes	67'
	38	12,276' - 278'	12			67'
	39	12,208' - 210'	12			67'
	40	12,141' - 143'	12			67'
Stage 11	41	12,073' - 075'	12	12108	6 SPF 60° 48 holes	67'
	42	12,006' - 008'	12			67'
	43	11,938' - 940'	12			67'
	44	11,871' - 873'	12			67'
Stage 12	45	11,803' - 805'	12	11838	6 SPF 60° 48 holes	67'
	46	11,736' - 738'	12			67'
	47	11,669' - 671'	12			67'
	48	11,601' - 603'	12			67'
Stage 13	49	11,534' - 536'	12	11568	6 SPF 60° 48 holes	67'
	50	11,466' - 468'	12			67'
	51	11,399' - 401'	12			67'
	52	11,331' - 333'	12			67'
Stage 14	53	11,264' - 266'	12	11299	6 SPF 60°	67'

44
II/II

	54	11,196' - 198'	12		48 holes	67'
	55	11,129' - 131'	12			67'
	56	11,062' - 064'	12			67'
Stage 15	57	10,994' - 996'	12	11029	6 SPF 60°	67'
	58	10,927' - 929'	12		48 holes	67'
	59	10,859' - 861'	12			67'
	60	10,792' - 794'	12			67'
Stage 16	61	10,724' - 726'	12	10759	6 SPF 60°	67'
	62	10,657' - 659'	12		48 holes	67'
	63	10,589' - 591'	12			67'
	64	10,522' - 524'	12			



WELL DETAILS: Cotton Draw 14 Fed 4H

Ground Level:	3415.50
Northing	413957.04
Easting	723808.83
Latitude	32° 8' 12.026 N
Longitude	103° 44' 37.759 W

