



September 18, 2014

Devon Energy
333 West Sheridan Ave
Oklahoma City, Oklahoma 73102-5010

15-
42503

Attn: David Cook

Re: **Cotton Draw Unit No. 171H**

Please find enclosed a copy of the survey from 0.00' to 4252.48' ran on the above referenced well.

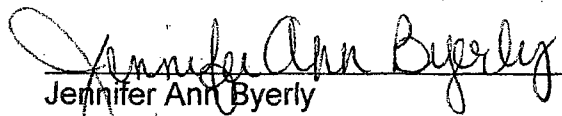
If I can be of any further service please do not hesitate to call me at 800-606-4976.

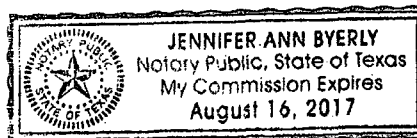
Sincerely,

Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 18 day of September A.D., 2014, by Keith Havelka.


Jennifer Ann Byerly
Notary Public, State of Texas





Company: Devon Energy
Lease/Well: Cotton Draw Unit/No. 171H

Rig Name: H&P 214
State/County: New Mexico/Eddy
Latitude: 32.15, Longitude: -103.73
GRID North is 0.32 Degrees East of True North
VS-Azi: 0.00 Degrees



Depth Reference : RKB= 25 Feet

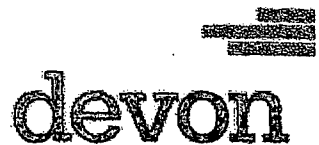
DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: drop.ut
Minimum Curvature Method
Report Date/Time: 9/19/2014 / 08:31

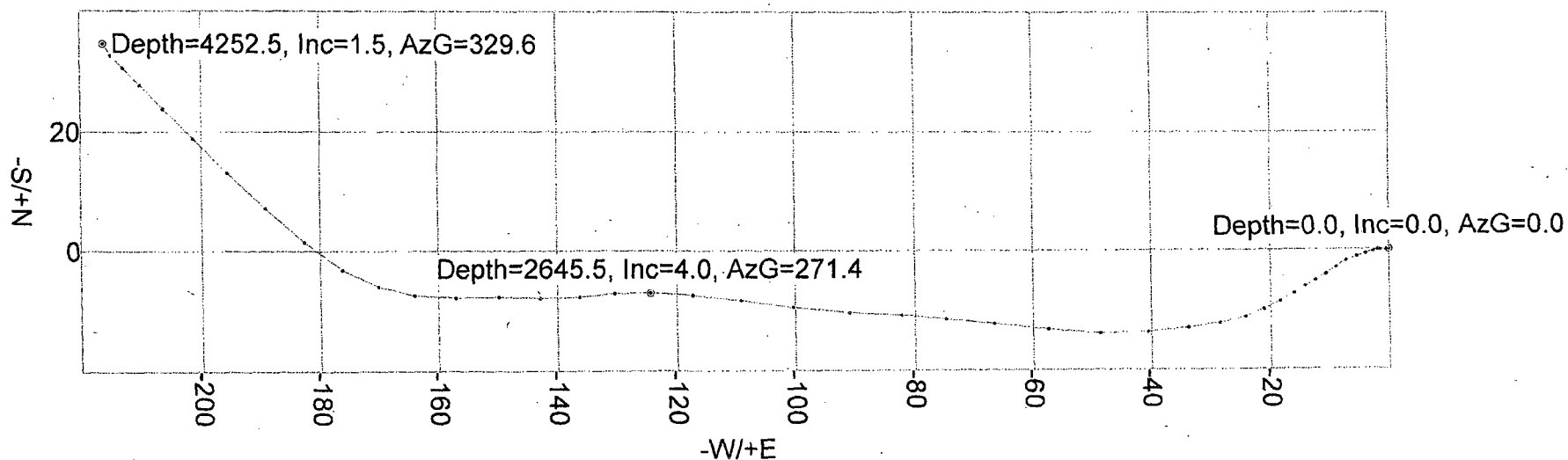
VES Survey International
West Texas
(432) 563-5444
Surveyor: Bryan Massey
Cotton Draw Unit No. 171H / API 30-015-42503

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
93.16	0.63	263.57	93.16	-0.06	-0.51	-0.06	0.52	263.57	0.68
187.69	0.48	279.89	187.68	-0.05	-1.42	-0.05	1.42	268.05	0.23
282.22	0.12	254.44	282.21	-0.01	-1.91	-0.01	1.91	269.77	0.39
376.75	0.92	249.45	376.74	-0.30	-2.71	-0.30	2.73	263.69	0.84
471.28	0.63	252.34	471.26	-0.72	-3.92	-0.72	3.98	259.54	0.31
565.81	1.25	256.79	565.78	-1.12	-5.42	-1.12	5.53	258.35	0.66
660.34	1.20	238.55	660.28	-1.87	-7.27	-1.87	7.51	255.57	0.42
754.87	1.16	235.68	754.79	-2.93	-8.91	-2.93	9.38	251.81	0.08
849.40	1.34	237.81	849.30	-4.06	-10.63	-4.06	11.38	249.12	0.20
943.93	1.16	239.27	943.81	-5.13	-12.39	-5.13	13.41	247.49	0.20
1038.46	1.26	244.01	1038.32	-6.08	-14.14	-6.08	15.39	246.75	0.15
1132.99	1.48	232.07	1132.82	-7.28	-16.04	-7.28	17.61	245.58	0.38
1227.52	1.86	246.62	1227.31	-8.64	-18.41	-8.64	20.34	244.86	0.60
1322.05	1.86	240.26	1321.79	-10.01	-21.15	-10.01	23.40	244.67	0.22
1416.58	2.27	254.75	1416.26	-11.26	-24.28	-11.26	26.76	245.12	0.70
1511.11	3.00	257.52	1510.69	-12.29	-28.50	-12.29	31.03	246.68	0.79
1605.64	3.49	265.84	1605.07	-13.03	-33.79	-13.03	36.21	248.91	0.72
1700.17	4.72	263.42	1699.35	-13.68	-40.52	-13.68	42.77	251.34	1.31

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1794.70	5.09	272.73	1793.54	-13.93	-48.57	-13.93	50.53	254.00	0.93
1889.23	5.71	276.40	1887.65	-13.21	-57.43	-13.21	58.93	257.05	0.74
1983.76	5.44	275.12	1981.73	-12.28	-66.57	-12.28	67.69	259.55	0.31
2078.29	4.49	276.00	2075.91	-11.50	-74.71	-11.50	75.59	261.25	1.02
2172.82	4.76	274.71	2170.13	-10.79	-82.30	-10.79	83.00	262.53	0.31
2267.35	5.85	271.51	2264.25	-10.34	-91.02	-10.34	91.61	263.52	1.19
2361.88	5.44	278.50	2358.33	-9.55	-100.27	-9.55	100.72	264.56	0.85
2456.41	5.38	277.40	2452.44	-8.32	-109.10	-8.32	109.41	265.64	0.12
2550.94	4.67	274.83	2546.60	-7.42	-117.33	-7.42	117.56	266.38	0.79
2645.47	4.04	271.37	2640.86	-7.02	-124.49	-7.02	124.69	266.77	0.73
2740.00	3.20	265.20	2735.20	-7.16	-130.45	-7.16	130.65	266.86	0.97
2834.53	3.95	264.10	2829.54	-7.71	-136.32	-7.71	136.54	266.76	0.79
2929.06	4.07	272.72	2923.84	-7.89	-142.91	-7.89	143.12	266.84	0.65
3023.59	4.35	270.72	3018.12	-7.69	-149.84	-7.69	150.04	267.06	0.33
3118.12	4.46	268.25	3112.37	-7.75	-157.09	-7.75	157.28	267.17	0.23
3212.65	3.98	277.51	3206.64	-7.44	-164.02	-7.44	164.19	267.40	0.88
3307.18	3.85	289.55	3300.96	-5.95	-170.26	-5.95	170.37	268.00	0.88
3401.71	4.28	299.88	3395.25	-3.13	-176.31	-3.13	176.34	268.98	0.90
3496.24	5.31	310.87	3489.45	1.49	-182.68	1.49	182.68	270.47	1.46
3590.77	5.35	311.00	3583.57	7.25	-189.31	7.25	189.45	272.19	0.04
3685.30	5.24	315.08	3677.70	13.19	-195.68	13.19	196.12	273.86	0.41
3779.83	4.66	314.14	3771.87	18.92	-201.48	18.92	202.37	275.36	0.61
3874.36	3.82	315.85	3866.14	23.86	-206.44	23.86	207.81	276.59	0.90
3968.89	2.63	315.23	3960.52	27.66	-210.16	27.66	211.97	277.50	1.26
4063.42	2.12	315.79	4054.97	30.46	-212.91	30.46	215.08	278.14	0.54
4157.95	1.39	320.22	4149.46	32.59	-214.86	32.59	217.32	278.63	0.79
4252.48	1.47	329.63	4243.96	34.52	-216.21	34.52	218.95	279.07	0.26



VES Survey International
West Texas
(432) 563-5444
Surveyor: Bryan Massey
Cotton Draw Unit No. 171H / API 30-015-42503





COTTON DRAW UNIT 171H

WEST UNRESTRICTED

Directional Survey

District DELAWARE BASIN	County EDDY	Field Name PADUCA	Project Group DELAWARE BASIN REG	State/Province NM
Surface Legal Location Sec. 1 T2SS R31E	API/UWI 3001542503	Latitude (") 32° 9' 9.432" N	Longitude (") 103° 43' 55.527" W	Ground Elev... 3,448.50
			KB - GL (ft) 25.00	Orig KB Elev (ft) 3,473.50
				Tubing Head Elevation (ft)

Wellbores

Wellbore Name OH	Parent Wellbore	SAP Well ID	Kick Off Depth (ftKB)	Vertical Section Direction (") 356.46
Actual Deviation Survey ACTUAL SURVEY'S, Proposed? No	Definitive? Yes	Proposed? No	Proposed Deviation Survey	

Deviation Survey

Date 9/3/2014	Description ACTUAL SURVEY'S
MD Tie In (ftKB) 0.00	TVD Tie In (ftKB) 0.00
Inclination Tie In (") 0.00	Azimuth Tie In (") 0.00
NSTie In (ft) 0.00	EW Tie In (ft) 0.00

Survey Data

Date	MD (ftKB)	Incl (")	Azm (")	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS ("/100ft)	Survey Tool	Survey Company
9/3/2014	93.16	0.63	263.57	93.16	-0.03	-0.06	-0.51	0.68	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	187.69	0.48	279.89	187.68	0.04	-0.05	-1.42	0.23	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	282.22	0.12	254.44	282.21	0.11	-0.01	-1.90	0.40	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	376.75	0.92	249.45	376.74	-0.13	-0.30	-2.71	0.85	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	471.28	0.63	252.34	471.26	-0.48	-0.72	-3.91	0.31	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	565.81	1.25	256.79	565.78	-0.78	-1.12	-5.41	0.66	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	660.34	1.20	238.55	660.28	-1.42	-1.87	-7.26	0.41	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	754.87	1.16	235.68	754.79	-2.37	-2.92	-8.89	0.08	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	849.40	1.34	237.81	849.30	-3.39	-4.05	-10.62	0.20	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	943.93	1.16	239.27	943.81	-4.36	-5.13	-12.38	0.19	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	1,038.46	1.26	244.01	1,038.32	-5.19	-6.07	-14.13	0.15	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	1,132.99	1.48	232.07	1,132.82	-6.28	-7.28	-16.03	0.38	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	1,227.52	1.86	246.62	1,227.31	-7.49	-8.64	-18.40	0.60	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	1,322.05	1.86	240.26	1,321.79	-8.69	-10.01	-21.14	0.22	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	1,416.58	2.27	254.75	1,416.26	-9.74	-11.26	-24.28	0.70	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	1,511.11	3.00	257.52	1,510.69	-10.51	-12.29	-28.50	0.78	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	1,605.64	3.49	265.84	1,605.07	-10.92	-13.03	-33.79	0.72	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	1,700.17	4.72	263.42	1,699.35	-11.16	-13.69	-40.52	1.31	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	1,794.70	5.09	272.73	1,793.54	-10.91	-13.93	-48.57	0.93	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	1,889.23	5.71	276.40	1,887.65	-9.64	-13.21	-57.44	0.75	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	1,983.76	5.44	275.12	1,981.73	-8.15	-12.29	-66.57	0.31	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	2,078.29	4.49	276.00	2,075.91	-6.86	-11.50	-74.72	1.01	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	2,172.82	4.76	274.71	2,170.13	-5.69	-10.79	-82.30	0.31	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	2,267.35	5.85	271.51	2,264.25	-4.70	-10.34	-91.03	1.19	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	2,361.88	5.44	278.50	2,358.33	-3.34	-9.55	-100.28	0.85	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	2,456.41	5.38	277.40	2,452.43	-1.57	-8.32	-109.10	0.13	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	2,550.94	4.67	274.83	2,546.60	-0.17	-7.42	-117.33	0.79	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	2,645.47	4.04	271.37	2,640.86	0.68	-7.02	-124.50	0.72	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	2,740.00	3.20	265.20	2,735.20	0.91	-7.16	-130.45	0.98	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	2,834.53	3.95	264.10	2,829.54	0.71	-7.72	-136.32	0.80	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	2,929.06	4.07	272.72	2,923.84	0.95	-7.89	-142.91	0.65	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	3,023.59	4.35	270.72	3,018.12	1.58	-7.69	-149.85	0.33	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	3,118.12	4.46	268.25	3,112.37	1.96	-7.76	-157.11	0.23	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	3,212.65	3.98	277.51	3,206.64	2.70	-7.44	-164.03	0.88	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	3,307.18	3.85	289.55	3,300.95	4.58	-5.95	-170.28	0.88	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	3,401.71	4.28	299.88	3,395.25	7.76	-3.13	-176.32	0.90	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	3,496.24	5.31	310.87	3,489.45	12.77	1.49	-182.69	1.46	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	3,590.77	5.35	311.00	3,583.57	18.92	7.24	-189.32	0.04	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	3,685.30	5.24	315.08	3,677.70	25.25	13.19	-195.70	0.41	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	3,779.83	4.66	314.14	3,771.87	31.33	18.92	-201.50	0.62	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	3,874.36	3.82	315.85	3,866.14	36.56	23.86	-206.45	0.90	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	3,968.89	2.63	315.23	3,960.52	40.58	27.66	-210.17	1.26	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	4,063.42	2.12	315.79	4,054.97	43.54	30.45	-212.92	0.54	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	4,157.95	1.39	320.22	4,149.46	45.79	32.58	-214.87	0.78	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	4,252.48	1.47	329.63	4,243.96	47.80	34.51	-216.22	0.26	GYRO	VAUHGN ENERGY SERVICES
9/3/2014	4,445.00	1.34	340.13	4,436.42	52.16	38.76	-218.23	0.15	MWD	WEATHERFORD
9/3/2014	4,539.00	1.35	296.46	4,530.40	53.77	40.29	-219.60	1.06	MWD	WEATHERFORD

Directional Survey

District DELAWARE BASIN	County EDDY	Field Name PADUCA	Project Group DELAWARE BASIN REG	State/Province NM
Surface Legal Location Sec. 1 T25S R31E	API/UWI 3001542503	Latitude (") 32° 9' 9.432" N	Longitude (") 103° 43' 55.527" W	Ground Elev... 3,448.50
			KB - GL (ft) 25.00	Orig KB Elev (ft) 3,473.50
				Tubing Head Elevation (ft)

Survey Data

Date	MD (ftKB)	Indl (")	Azm (")	FVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (7/100ft)	Survey Tool	Survey Company
9/3/2014	4,634.00	1.79	255.95	4,625.36	54.06	40.42	-222.04	1.22	MWD	WEATHERFORD
9/3/2014	4,728.00	1.79	254.23	4,719.32	53.48	39.67	-224.88	0.06	MWD	WEATHERFORD
9/3/2014	4,823.00	2.77	247.82	4,814.24	52.43	38.40	-228.43	1.06	MWD	WEATHERFORD
9/3/2014	4,917.00	3.51	243.08	4,908.10	50.56	36.24	-233.10	0.83	MWD	WEATHERFORD
9/3/2014	5,012.00	4.49	237.11	5,002.87	47.58	32.90	-238.81	1.12	MWD	WEATHERFORD
9/3/2014	5,106.00	5.21	240.22	5,096.53	43.89	28.78	-245.61	0.82	MWD	WEATHERFORD
9/3/2014	5,200.00	5.92	236.98	5,190.09	39.62	24.02	-253.38	0.83	MWD	WEATHERFORD
9/3/2014	5,295.00	6.86	234.62	5,284.49	34.22	18.07	-262.11	1.03	MWD	WEATHERFORD
9/3/2014	5,389.00	6.80	232.17	5,377.83	28.12	11.40	-271.08	0.32	MWD	WEATHERFORD
9/3/2014	5,483.00	6.78	231.85	5,471.17	21.83	4.56	-279.84	0.05	MWD	WEATHERFORD
9/3/2014	5,578.00	6.68	231.67	5,565.51	15.50	-2.33	-288.59	0.11	MWD	WEATHERFORD
9/3/2014	5,672.00	6.66	231.07	5,658.88	9.22	-9.14	-297.12	0.08	MWD	WEATHERFORD
9/3/2014	5,766.00	6.47	237.00	5,752.26	3.46	-15.45	-305.80	0.75	MWD	WEATHERFORD
9/3/2014	5,861.00	6.25	236.52	5,846.68	-1.75	-21.22	-314.60	0.24	MWD	WEATHERFORD
9/3/2014	5,955.00	6.10	236.02	5,940.13	-6.84	-26.83	-323.01	0.17	MWD	WEATHERFORD
9/3/2014	6,050.00	6.22	232.21	6,034.58	-12.29	-32.81	-331.26	0.45	MWD	WEATHERFORD
9/3/2014	6,145.00	6.26	235.31	6,129.02	-17.87	-38.91	-339.59	0.36	MWD	WEATHERFORD
9/3/2014	6,239.00	6.71	234.03	6,222.42	-23.46	-45.05	-348.25	0.50	MWD	WEATHERFORD
9/3/2014	6,334.00	6.70	232.16	6,316.77	-29.56	-51.71	-357.11	0.23	MWD	WEATHERFORD
9/3/2014	6,428.00	6.62	230.41	6,410.14	-35.84	-58.53	-365.62	0.23	MWD	WEATHERFORD
9/3/2014	6,523.00	6.60	230.28	6,504.50	-42.29	-65.51	-374.04	0.03	MWD	WEATHERFORD
9/3/2014	6,617.00	6.67	229.95	6,597.87	-48.72	-72.47	-382.37	0.08	MWD	WEATHERFORD
9/3/2014	6,712.00	6.64	229.51	6,692.23	-55.31	-79.59	-390.77	0.06	MWD	WEATHERFORD
9/3/2014	6,806.00	6.08	229.46	6,785.66	-61.57	-86.35	-398.69	0.60	MWD	WEATHERFORD
9/3/2014	6,901.00	6.24	230.86	6,880.11	-67.61	-92.88	-406.52	0.23	MWD	WEATHERFORD
9/3/2014	6,995.00	6.56	233.73	6,973.52	-73.48	-99.28	-414.81	0.48	MWD	WEATHERFORD
9/3/2014	7,090.00	6.42	233.91	7,067.91	-79.27	-105.62	-423.48	0.15	MWD	WEATHERFORD
9/3/2014	7,184.00	6.45	234.04	7,161.32	-84.93	-111.82	-432.00	0.04	MWD	WEATHERFORD
9/3/2014	7,278.00	6.06	233.54	7,254.76	-90.46	-117.87	-440.26	0.42	MWD	WEATHERFORD
9/3/2014	7,373.00	6.53	235.33	7,349.19	-95.98	-123.92	-448.74	0.54	MWD	WEATHERFORD
9/3/2014	7,468.00	6.30	236.80	7,443.59	-101.35	-129.85	-457.54	0.30	MWD	WEATHERFORD
9/3/2014	7,562.00	6.26	236.34	7,537.03	-106.47	-135.51	-466.12	0.07	MWD	WEATHERFORD
9/3/2014	7,583.00	6.16	236.43	7,557.91	-107.61	-136.77	-468.01	0.48	MWD	WEATHERFORD
9/3/2014	7,628.00	5.93	235.68	7,602.66	-110.01	-139.42	-471.95	0.54	MWD	WEATHERFORD
9/3/2014	7,660.00	5.72	250.11	7,634.49	-111.30	-140.89	-474.81	4.61	MWD	WEATHERFORD
9/3/2014	7,691.00	7.04	279.82	7,665.31	-111.30	-141.09	-478.14	11.31	MWD	WEATHERFORD
9/3/2014	7,723.00	10.41	303.94	7,696.94	-109.09	-139.14	-482.47	15.33	MWD	WEATHERFORD
9/3/2014	7,754.00	13.45	319.36	7,727.28	-104.50	-134.84	-487.14	14.13	MWD	WEATHERFORD
9/3/2014	7,786.00	16.27	336.21	7,758.22	-97.33	-127.91	-491.38	16.04	MWD	WEATHERFORD
9/3/2014	7,817.00	19.95	346.88	7,787.69	-88.03	-118.78	-494.33	15.94	MWD	WEATHERFORD
9/3/2014	7,848.00	24.78	353.86	7,816.35	-76.32	-107.16	-496.23	17.76	MWD	WEATHERFORD
9/3/2014	7,880.00	30.45	357.82	7,844.70	-61.50	-92.38	-497.26	18.62	MWD	WEATHERFORD
9/3/2014	7,912.00	35.12	358.75	7,871.59	-44.19	-75.06	-497.77	14.68	MWD	WEATHERFORD
9/3/2014	7,943.00	38.77	0.13	7,896.36	-25.58	-56.44	-497.94	12.07	MWD	WEATHERFORD
9/3/2014	7,975.00	42.48	1.83	7,920.65	-4.82	-35.61	-497.57	12.10	MWD	WEATHERFORD
9/3/2014	8,006.00	46.77	3.04	7,942.71	16.83	-13.86	-496.64	14.11	MWD	WEATHERFORD
9/3/2014	8,037.00	50.80	0.98	7,963.13	40.04	9.44	-495.83	13.93	MWD	WEATHERFORD
9/3/2014	8,069.00	55.42	358.50	7,982.33	65.58	35.02	-495.96	15.71	MWD	WEATHERFORD
9/3/2014	8,100.00	59.74	357.07	7,998.95	91.73	61.16	-496.98	14.47	MWD	WEATHERFORD
9/3/2014	8,132.00	62.34	358.00	8,014.44	119.72	89.13	-498.18	8.51	MWD	WEATHERFORD
9/3/2014	8,163.00	64.78	359.29	8,028.25	147.46	116.88	-498.84	8.71	MWD	WEATHERFORD
9/3/2014	8,195.00	67.76	359.35	8,041.12	176.71	146.17	-499.19	9.31	MWD	WEATHERFORD
9/10/2014	8,224.00	69.85	359.54	8,051.61	203.71	173.21	-499.45	7.23	MWD	WEATHERFORD
9/13/2014	8,252.00	70.84	359.83	8,061.02	230.04	199.57	-499.59	3.67	MWD	WEATHERFORD
9/14/2014	8,283.00	72.23	359.82	8,070.84	259.39	228.98	-499.68	4.48	MWD	WEATHERFORD



COTTON DRAW UNIT 171H

WEST UNRESTRICTED

Directional Survey

District DELAWARE BASIN	County EDDY	Field Name PADUCA	Project Group DELAWARE BASIN REG	State/Province NM
Surface Legal Location Sec. 1 T2S R31E	API/UWI 3001542503	Latitude (°) 32° 9' 9.432" N	Longitude (°) 103° 43' 55.527" W	Ground Elev... 3,448.50
			KB - GL (ft) 25.00	Ong KB Elev (ft) 3,473.50
				Tubing Head Elevation (ft)

Survey Data

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
9/14/2014	8,315.00	73.40	359.77	8,080.30	289.91	259.55	-499.79	3.66	MWD	WEATHERFORD
9/14/2014	8,346.00	74.40	359.90	8,088.89	319.64	289.33	-499.88	3.25	MWD	WEATHERFORD
9/14/2014	8,378.00	75.86	0.11	8,097.11	350.51	320.26	-499.87	4.61	MWD	WEATHERFORD
9/14/2014	8,409.00	77.24	0.35	8,104.32	380.60	350.41	-499.75	4.51	MWD	WEATHERFORD
9/14/2014	8,441.00	78.73	0.11	8,110.98	411.83	381.70	-499.63	4.71	MWD	WEATHERFORD
9/14/2014	8,472.00	79.81	0.13	8,116.75	442.22	412.16	-499.56	3.48	MWD	WEATHERFORD
9/14/2014	8,504.00	80.66	0.38	8,122.18	473.69	443.70	-499.42	2.77	MWD	WEATHERFORD
9/14/2014	8,536.00	81.64	0.10	8,127.10	505.24	475.32	-499.29	3.18	MWD	WEATHERFORD
9/15/2014	8,567.00	82.78	0.26	8,131.30	535.89	506.03	-499.19	3.71	MWD	WEATHERFORD
9/15/2014	8,598.00	84.32	0.29	8,134.78	566.62	536.83	-499.05	4.97	MWD	WEATHERFORD
9/15/2014	8,630.00	86.08	0.33	8,137.46	598.44	568.72	-498.87	5.50	MWD	WEATHERFORD
9/15/2014	8,724.00	90.56	0.28	8,140.22	692.16	662.65	-498.37	4.77	MWD	WEATHERFORD
9/15/2014	8,819.00	90.63	357.52	8,139.23	787.06	757.62	-500.20	2.91	MWD	WEATHERFORD
9/15/2014	8,913.00	90.07	356.54	8,138.66	881.05	851.49	-505.07	1.20	MWD	WEATHERFORD
9/15/2014	9,007.00	89.72	354.81	8,138.83	975.04	945.22	-512.16	1.88	MWD	WEATHERFORD
9/15/2014	9,102.00	91.12	356.77	8,138.13	1,070.02	1,039.95	-519.13	2.54	MWD	WEATHERFORD
9/15/2014	9,196.00	90.28	357.98	8,136.98	1,164.00	1,133.85	-523.43	1.57	MWD	WEATHERFORD
9/15/2014	9,290.00	89.09	359.26	8,137.50	1,257.93	1,227.81	-525.70	1.86	MWD	WEATHERFORD
9/15/2014	9,385.00	89.23	358.84	8,138.89	1,352.82	1,322.79	-527.27	0.47	MWD	WEATHERFORD
9/15/2014	9,479.00	89.72	359.73	8,139.75	1,446.70	1,416.78	-528.45	1.08	MWD	WEATHERFORD
9/15/2014	9,573.00	91.12	359.94	8,139.06	1,540.53	1,510.77	-528.72	1.51	MWD	WEATHERFORD
9/15/2014	9,668.00	88.11	357.95	8,139.70	1,635.43	1,605.74	-530.46	3.80	MWD	WEATHERFORD
9/15/2014	9,762.00	90.00	359.15	8,141.25	1,729.35	1,699.69	-532.84	2.38	MWD	WEATHERFORD
9/15/2014	9,857.00	90.28	359.39	8,141.02	1,824.23	1,794.68	-534.05	0.39	MWD	WEATHERFORD
9/16/2014	9,951.00	89.65	357.88	8,141.08	1,918.16	1,888.65	-536.29	1.74	MWD	WEATHERFORD
9/16/2014	10,046.00	88.88	358.50	8,142.30	2,013.11	1,983.59	-539.29	1.04	MWD	WEATHERFORD
9/16/2014	10,141.00	89.93	0.02	8,143.28	2,107.99	2,078.58	-540.52	1.94	MWD	WEATHERFORD
9/16/2014	10,235.00	90.21	0.68	8,143.17	2,201.77	2,172.57	-539.95	0.76	MWD	WEATHERFORD
9/16/2014	10,330.00	89.93	0.50	8,143.05	2,296.52	2,267.57	-538.97	0.35	MWD	WEATHERFORD
9/16/2014	10,424.00	90.07	0.61	8,143.05	2,390.28	2,361.57	-538.06	0.19	MWD	WEATHERFORD
9/16/2014	10,519.00	90.63	2.10	8,142.47	2,484.93	2,456.53	-535.81	1.68	MWD	WEATHERFORD
9/16/2014	10,613.00	89.58	0.71	8,142.30	2,578.58	2,550.50	-533.51	1.85	MWD	WEATHERFORD
9/16/2014	10,708.00	89.58	0.54	8,143.00	2,673.32	2,645.49	-532.47	0.18	MWD	WEATHERFORD
9/16/2014	10,802.00	91.05	2.24	8,142.48	2,766.97	2,739.46	-530.19	2.39	MWD	WEATHERFORD
9/16/2014	10,896.00	91.75	1.31	8,140.18	2,860.53	2,833.38	-527.28	1.24	MWD	WEATHERFORD
9/16/2014	10,991.00	90.56	0.37	8,138.27	2,955.23	2,928.35	-525.89	1.60	MWD	WEATHERFORD
9/19/2014	11,087.00	91.12	359.58	8,136.86	3,051.04	3,024.34	-525.93	1.01	MWD	WEATHERFORD
9/19/2014	11,182.00	90.07	358.95	8,135.87	3,145.92	3,119.33	-527.15	1.29	MWD	WEATHERFORD
9/19/2014	11,277.00	90.28	358.57	8,135.58	3,240.84	3,214.30	-529.20	0.46	MWD	WEATHERFORD
9/19/2014	11,371.00	89.09	358.75	8,136.10	3,334.77	3,308.27	-531.40	1.28	MWD	WEATHERFORD
9/19/2014	11,466.00	88.95	0.00	8,137.73	3,429.63	3,403.25	-532.44	1.32	MWD	WEATHERFORD
9/19/2014	11,560.00	90.00	359.92	8,138.59	3,523.45	3,497.25	-532.50	1.12	MWD	WEATHERFORD
9/19/2014	11,655.00	88.74	356.82	8,139.63	3,618.38	3,592.19	-535.20	3.52	MWD	WEATHERFORD
9/19/2014	11,749.00	88.67	357.13	8,141.76	3,712.35	3,686.03	-540.16	0.34	MWD	WEATHERFORD
9/19/2014	11,844.00	90.63	359.16	8,142.34	3,807.30	3,780.97	-543.24	2.97	MWD	WEATHERFORD
9/19/2014	11,939.00	89.86	359.54	8,141.93	3,902.18	3,875.96	-544.32	0.90	MWD	WEATHERFORD
9/19/2014	12,033.00	89.16	1.10	8,142.73	3,995.96	3,969.96	-543.79	1.82	MWD	WEATHERFORD
9/20/2014	12,127.00	90.28	2.67	8,143.19	4,089.53	4,063.90	-540.70	2.05	MWD	WEATHERFORD
9/20/2014	12,222.00	91.05	3.51	8,142.09	4,183.89	4,158.75	-535.58	1.20	MWD	WEATHERFORD
9/20/2014	12,317.00	89.51	359.79	8,141.63	4,278.48	4,253.69	-532.84	4.24	MWD	WEATHERFORD
9/20/2014	12,411.00	90.28	359.96	8,141.80	4,372.31	4,347.69	-533.05	0.84	MWD	WEATHERFORD
9/20/2014	12,505.00	89.58	359.50	8,141.91	4,466.16	4,441.69	-533.49	0.89	MWD	WEATHERFORD
9/20/2014	12,600.00	88.18	359.10	8,143.77	4,561.02	4,536.66	-534.65	1.53	MWD	WEATHERFORD
9/20/2014	12,694.00	88.53	359.29	8,146.47	4,654.87	4,630.61	-535.97	0.42	MWD	WEATHERFORD
9/20/2014	12,789.00	88.60	359.26	8,148.85	4,749.73	4,725.58	-537.17	0.08	MWD	WEATHERFORD



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Directional Survey

District DELAWARE BASIN	County EDDY	Field Name PADUCA	Project Group DELAWARE BASIN REG	State/Province NM
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			KB - GL (ft) 25.00	Orig KB Elev (ft) 3,473.50
				Tubing Head Elevation (ft)

Survey Data

Date	MD (ftKB)	Incl (")	Azmt (")	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS ("/100ft)	Survey Tool	Survey Company
9/21/2014	12,836.00	88.39	359.03	8,150.08	4,796.66	4,772.56	-537.87	0.66	MWD	WEATHERFORD
9/21/2014	12,905.00	88.39	359.03	8,152.02	4,865.56	4,841.52	-539.04	0.00	BIT	WEATHERFORD