

15-42318



September 15, 2014

Devon Energy Production Co., L. P.
333 West Sheridan Ave
Oklahoma City, Oklahoma 73102-5010

Attn: David Cook

Re: **Cotton Draw Unit 217H**

Please find enclosed a copy of the survey from 0.00' to 4250.00' 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,

A handwritten signature in black ink, appearing to read "Keith Havelka".

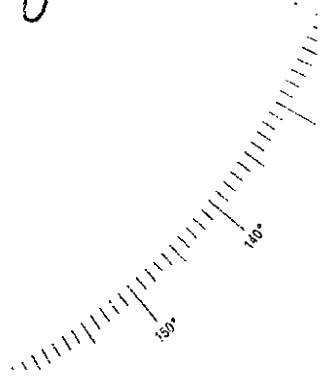
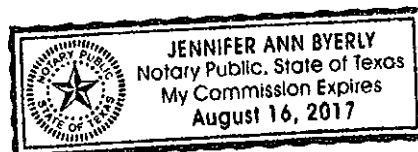
Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 15 day of September A.D., 2014, by Keith Havelka.

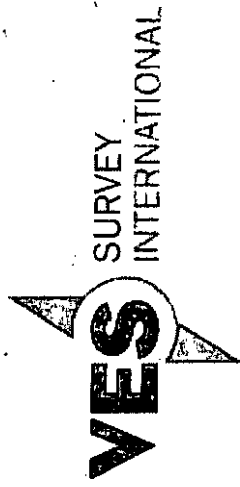
A handwritten signature in black ink, appearing to read "Jennifer Ann Byerly".

Jennifer Ann Byerly
Notary Public, State of Texas





Company: Devon Energy
Lease/Well: Cotton Draw Unit /217H



Rig Name: H&P 223
State/County: New Mexico /Eddy
Latitude: 32.15, Longitude: -103.75
GRID North is 0.31 Degrees East of True North
VS-Azi: 0.00 Degrees

Depth Reference : R.K.B = 25FT

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: cotton draw unit 217h-de_01.ut
Minimum Curvature Method
Report Date/Time: 9/15/2014 / 14:57

VES Survey International
(432) 563-5444
West Texas

Surveyor: Javier Estrada

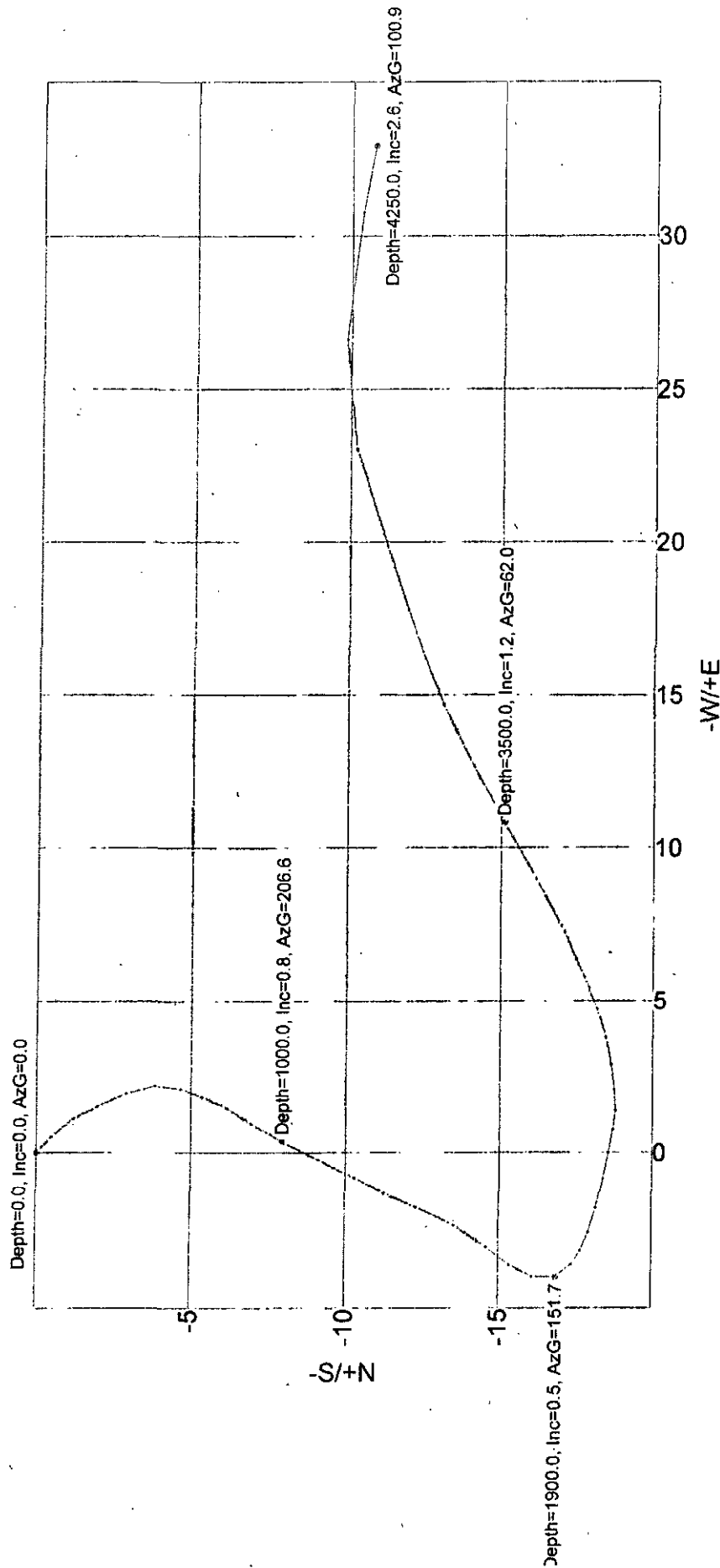
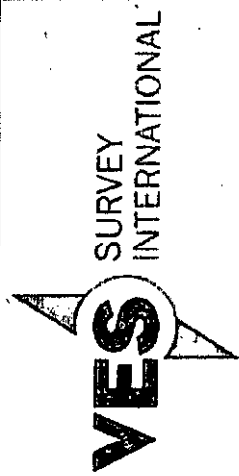
Cotton Draw Unit 217H / API 30-015-42318

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	****
100.00	0.80	132.82	100.00	-0.48	0.51	-0.48	0.70	132.82	0.80
200.00	0.30	157.80	199.99	-1.20	1.13	-1.20	1.64	136.74	0.54
300.00	0.67	151.73	299.99	-1.96	1.50	-1.96	2.47	142.49	0.37
400.00	0.52	168.27	399.98	-2.90	1.95	-2.90	3.49	146.06	0.17
500.00	0.60	171.57	499.98	-3.84	2.19	-3.84	4.42	150.23	0.15
600.00	0.41	207.89	599.97	-4.67	2.10	-4.67	5.13	155.76	0.36
700.00	0.44	195.52	699.97	-5.36	1.83	-5.36	5.67	161.13	0.10
800.00	0.58	211.52	799.97	-6.16	1.47	-6.16	6.33	166.61	0.19
900.00	0.52	215.04	899.96	-6.97	0.94	-6.97	7.03	172.30	0.06
1000.00	0.79	206.59	999.96	-7.96	0.37	-7.96	7.97	177.34	0.28
1100.00	0.71	209.49	1099.95	-9.11	-0.24	-9.11	9.11	181.53	0.09
1200.00	0.78	203.72	1199.94	-10.28	-0.82	-10.28	10.31	184.58	0.11
1300.00	0.49	210.21	1299.93	-11.28	-1.32	-11.28	11.36	186.66	0.31
1400.00	0.79	199.71	1399.93	-12.30	-1.77	-12.30	12.43	188.17	0.31
1500.00	0.81	210.43	1499.92	-13.55	-2.35	-13.55	13.76	189.85	0.15
1600.00	0.64	218.72	1599.91	-14.60	-3.06	-14.60	14.92	191.84	0.19
1700.00	0.45	211.96	1699.90	-15.37	-3.62	-15.37	15.79	193.25	0.21
1800.00	0.52	203.25	1799.90	-16.12	-4.00	-16.12	16.61	193.95	0.10

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
1900.00	0.46	151.74	1899.90	-16.88	-4.00	-16.88	17.35	193.32	0.43
2000.00	0.29	129.17	1999.90	-17.39	-3.61	-17.39	17.76	191.73	0.22
2100.00	0.31	119.71	2099.89	-17.69	-3.18	-17.69	17.97	190.19	0.05
2200.00	0.43	110.30	2199.89	-17.95	-2.59	-17.95	18.14	188.22	0.13
2300.00	0.52	103.69	2299.89	-18.19	-1.80	-18.19	18.28	185.65	0.11
2400.00	0.58	101.34	2399.88	-18.40	-0.86	-18.40	18.42	182.69	0.06
2500.00	0.41	101.68	2499.88	-18.57	-0.01	-18.57	18.57	180.04	0.17
2600.00	0.46	100.02	2599.88	-18.71	0.74	-18.71	18.73	177.75	0.05
2700.00	0.29	92.89	2699.88	-18.80	1.39	-18.80	18.85	175.79	0.17
2800.00	0.47	82.98	2799.87	-18.76	2.05	-18.76	18.87	173.76	0.19
2900.00	0.50	82.07	2899.87	-18.65	2.89	-18.65	18.87	171.20	0.03
3000.00	0.55	76.90	2999.87	-18.48	3.79	-18.48	18.86	168.42	0.07
3100.00	0.57	68.53	3099.86	-18.19	4.72	-18.19	18.79	165.46	0.08
3200.00	0.76	67.01	3199.85	-17.75	5.79	-17.75	18.67	161.95	0.19
3300.00	1.08	65.69	3299.84	-17.10	7.25	-17.10	18.58	157.03	0.32
3400.00	1.21	58.30	3399.82	-16.16	9.00	-16.16	18.50	150.88	0.19
3500.00	1.21	61.96	3499.80	-15.12	10.83	-15.12	18.59	144.39	0.08
3600.00	1.21	61.09	3599.78	-14.11	12.68	-14.11	18.97	138.07	0.02
3700.00	1.36	66.13	3699.75	-13.13	14.68	-13.13	19.69	131.80	0.19
3800.00	1.56	70.10	3799.72	-12.18	17.04	-12.18	20.95	125.57	0.23
3900.00	1.87	72.53	3899.67	-11.23	19.88	-11.23	22.83	119.47	0.32
4000.00	1.94	71.61	3999.62	-10.21	23.04	-10.21	25.20	113.89	0.08
4100.00	2.28	94.45	4099.55	-9.82	26.63	-9.82	28.39	110.25	0.90
4200.00	2.47	99.89	4199.47	-10.35	30.74	-10.35	32.44	108.61	0.30
4250.00	2.65	100.94	4249.42	-10.75	32.94	-10.75	34.65	108.08	0.36



VES Survey International
(432) 563-5444
West Texas
Surveyor: Javier Estrada
Cotton Draw Unit 217H / API 30-015-42318



VES Survey Date: 08/31/2014

COTTON DRAW UNIT 217H

WEST UNRESTRICTED

devon

Directional Survey

District DELAWARE BASIN	County EDDY	Field Name PADUCA	Project Group DELAWARE BASIN REG	State/Province NM
Surface Legal Location Sec. 3, T2S R31E	API/UWI 3001542318	Latitude (°) 32° 9' 10.049" N	Longitude (°) 103° 45' 42.252" W	Ground Elev... 3,425.20
			KB - GL (ft) 25.00	Orig KB Elev (ft) 3,450.20
				Tubing Head Elevation (ft)

Wellbore Name OH	Parent Wellbore	SAP Well ID	Kick Off Depth (ftKB)	Vertical Section Direction (°)
Actual Deviation Survey MWD, LEAM, Proposed? No	Definitive? Yes	Proposed? No	Proposed Deviation Survey	

Deviation Survey											
Date 9/4/2014		Description MWD, LEAM									
MD Tie In (ftKB)	4,250.00	TVD Tie In (ftKB)	4,249.42	Inclination Tie In (°)	2.64	Azimuth Tie In (°)	100.94	NSTie In (ft)	-10.73	EW Tie In (ft)	32.95

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	EW (ft)	DLS (°/100ft)	Survey Tool	Survey Company
9/4/2014	4,250.00	2.65	100.94	4,249.42	-5.78	-10.73	32.95	0.00	MWD	LEAM DRILLING SYSTEMS
9/4/2014	4,364.00	2.50	101.90	4,363.31	-6.04	-11.74	37.96	0.13	MWD	LEAM DRILLING SYSTEMS
9/4/2014	4,458.00	2.10	101.60	4,457.23	-6.26	-12.51	41.65	0.43	MWD	LEAM DRILLING SYSTEMS
9/4/2014	4,553.00	2.40	100.20	4,552.16	-6.42	-13.21	45.32	0.32	MWD	LEAM DRILLING SYSTEMS
9/4/2014	4,647.00	3.70	97.90	4,646.02	-6.45	-13.98	50.26	1.39	MWD	LEAM DRILLING SYSTEMS
9/4/2014	4,741.00	5.80	91.90	4,739.69	-5.88	-14.55	58.01	2.29	MWD	LEAM DRILLING SYSTEMS
9/4/2014	4,836.00	6.60	97.00	4,834.14	-5.20	-15.38	68.23	1.02	MWD	LEAM DRILLING SYSTEMS
9/4/2014	4,930.00	6.70	97.20	4,927.51	-4.94	-16.72	79.03	0.11	MWD	LEAM DRILLING SYSTEMS
9/4/2014	5,024.00	6.70	97.00	5,020.86	-4.69	-18.08	89.91	0.02	MWD	LEAM DRILLING SYSTEMS
9/4/2014	5,119.00	8.40	94.50	5,115.04	-4.07	-19.30	102.33	1.82	MWD	LEAM DRILLING SYSTEMS
9/4/2014	5,213.00	9.00	93.70	5,207.95	-2.99	-20.31	116.51	0.65	MWD	LEAM DRILLING SYSTEMS
9/4/2014	5,307.00	8.88	94.19	5,300.81	-1.85	-21.32	131.09	0.15	MWD	LEAM DRILLING SYSTEMS
9/4/2014	5,401.00	8.88	93.14	5,393.69	-0.64	-22.24	145.57	0.17	MWD	LEAM DRILLING SYSTEMS
9/4/2014	5,495.00	8.88	93.14	5,486.56	0.70	-23.04	160.05	0.00	MWD	LEAM DRILLING SYSTEMS
9/4/2014	5,590.00	9.06	93.14	5,580.40	2.06	-23.85	174.84	0.19	MWD	LEAM DRILLING SYSTEMS
9/4/2014	5,684.00	9.15	93.49	5,673.21	3.39	-24.71	189.69	0.11	MWD	LEAM DRILLING SYSTEMS
9/4/2014	5,779.00	9.20	92.30	5,767.00	4.86	-25.47	204.82	0.21	MWD	LEAM DRILLING SYSTEMS
9/4/2014	5,874.00	9.20	92.30	5,860.78	6.48	-26.08	220.00	0.00	MWD	LEAM DRILLING SYSTEMS
9/4/2014	5,968.00	9.00	93.00	5,953.59	7.98	-26.77	234.85	0.24	MWD	LEAM DRILLING SYSTEMS
9/5/2014	6,063.00	8.90	92.40	6,047.44	9.46	-27.47	249.61	0.14	MWD	LEAM DRILLING SYSTEMS
9/5/2014	6,157.00	8.70	92.60	6,140.33	10.95	-28.09	263.98	0.22	MWD	LEAM DRILLING SYSTEMS
9/5/2014	6,252.00	8.80	93.80	6,234.22	12.26	-28.90	278.41	0.22	MWD	LEAM DRILLING SYSTEMS
9/5/2014	6,347.00	9.00	95.10	6,328.08	13.28	-30.04	293.06	0.30	MWD	LEAM DRILLING SYSTEMS
9/5/2014	6,441.00	8.70	90.90	6,420.96	14.64	-30.81	307.49	0.76	MWD	LEAM DRILLING SYSTEMS
9/5/2014	6,536.00	8.90	89.80	6,514.84	16.69	-30.90	322.02	0.28	MWD	LEAM DRILLING SYSTEMS
9/5/2014	6,630.00	8.80	89.60	6,607.72	18.89	-30.82	336.49	0.11	MWD	LEAM DRILLING SYSTEMS
9/5/2014	6,724.00	9.00	90.00	6,700.59	21.07	-30.77	351.03	0.22	MWD	LEAM DRILLING SYSTEMS
9/5/2014	6,819.00	8.60	92.40	6,794.47	22.91	-31.07	365.56	0.57	MWD	LEAM DRILLING SYSTEMS
9/5/2014	6,913.00	8.40	93.00	6,887.44	24.30	-31.72	379.43	0.23	MWD	LEAM DRILLING SYSTEMS
9/5/2014	7,008.00	7.00	86.50	6,981.58	26.15	-31.73	392.14	1.73	MWD	LEAM DRILLING SYSTEMS
9/5/2014	7,102.00	6.70	86.80	7,074.91	28.44	-31.07	403.33	0.32	MWD	LEAM DRILLING SYSTEMS
9/5/2014	7,197.00	6.20	88.60	7,169.31	30.44	-30.64	414.00	0.57	MWD	LEAM DRILLING SYSTEMS
9/5/2014	7,291.00	6.20	91.20	7,262.76	31.95	-30.62	424.15	0.30	MWD	LEAM DRILLING SYSTEMS
9/5/2014	7,385.00	5.90	91.90	7,356.24	33.14	-30.89	434.05	0.33	MWD	LEAM DRILLING SYSTEMS
9/5/2014	7,479.00	6.00	93.70	7,449.73	34.09	-31.37	443.78	0.23	MWD	LEAM DRILLING SYSTEMS
9/5/2014	7,574.00	6.00	96.80	7,544.21	34.64	-32.27	453.67	0.34	MWD	LEAM DRILLING SYSTEMS
9/5/2014	7,669.00	6.20	99.10	7,638.67	34.73	-33.67	463.66	0.33	MWD	LEAM DRILLING SYSTEMS
9/5/2014	7,763.00	6.10	101.40	7,732.13	34.41	-35.46	473.57	0.28	MWD	LEAM DRILLING SYSTEMS
9/5/2014	7,857.00	5.60	102.30	7,825.64	33.84	-37.43	482.95	0.54	MWD	LEAM DRILLING SYSTEMS
9/7/2014	7,952.00	5.70	96.30	7,920.18	33.71	-38.93	492.16	0.63	MWD	LEAM DRILLING SYSTEMS
9/8/2014	8,046.00	5.50	96.70	8,013.73	34.02	-39.97	501.28	0.22	MWD	LEAM DRILLING SYSTEMS
9/8/2014	8,141.00	5.20	103.50	8,108.32	33.77	-41.51	509.99	0.74	MWD	LEAM DRILLING SYSTEMS
9/8/2014	8,236.00	5.70	106.30	8,201.90	32.76	-43.81	518.61	0.60	MWD	LEAM DRILLING SYSTEMS
9/8/2014	8,330.00	5.60	97.90	8,296.44	32.16	-45.77	527.73	0.88	MWD	LEAM DRILLING SYSTEMS
9/8/2014	8,424.00	4.90	93.10	8,390.04	32.57	-46.62	536.28	0.88	MWD	LEAM DRILLING SYSTEMS
9/8/2014	8,519.00	4.20	95.20	8,484.74	33.15	-47.16	543.80	0.76	MWD	LEAM DRILLING SYSTEMS
9/8/2014	8,613.00	4.30	87.90	8,578.48	33.99	-47.34	550.74	0.58	MWD	LEAM DRILLING SYSTEMS



COTTON DRAW UNIT 217H

WEST UNRESTRICTED

Directional Survey

District DELAWARE BASIN	County EDDY	Field Name PADUCA	Project Group DELAWARE BASIN REG	State/Province NM
Surface Legal Location Sec. 3, T25S R31E	API/UWI 3001542318	Latitude (°) 32° 9' 10.049" N	Longitude (°) 103° 45' 42.252" W	Ground Elev... 3,425.20
			KB - GL (ft) 25.00	Orig KB Elev (ft) 3,450.20
				Tubing Head Elevation (ft)

Survey Data

Date	MD (ft)	Incl (°)	Azm (°)	TVD (ft)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
9/8/2014	8,708.00	3.40	88.90	8,673.27	35.11	-47.15	557.12	0.95	MWD	LEAM DRILLING SYSTEMS
9/8/2014	8,802.00	3.00	91.20	8,767.12	35.88	-47.15	562.37	0.45	MWD	LEAM DRILLING SYSTEMS
9/9/2014	8,896.00	2.90	74.20	8,861.00	37.16	-46.56	567.11	0.93	MWD	LEAM DRILLING SYSTEMS
9/9/2014	8,991.00	2.10	37.90	8,955.91	39.67	-44.53	570.50	1.82	MWD	LEAM DRILLING SYSTEMS
9/9/2014	9,086.00	1.70	15.40	9,050.86	42.58	-41.80	571.94	0.88	MWD	LEAM DRILLING SYSTEMS
9/9/2014	9,180.00	1.70	3.80	9,144.82	45.35	-39.06	572.40	0.37	MWD	LEAM DRILLING SYSTEMS
9/9/2014	9,275.00	1.60	0.10	9,239.78	48.07	-36.33	572.50	0.15	MWD	LEAM DRILLING SYSTEMS
9/9/2014	9,369.00	1.30	35.80	9,333.75	50.32	-34.15	573.12	0.99	MWD	LEAM DRILLING SYSTEMS
9/9/2014	9,464.00	1.80	69.40	9,428.72	52.00	-32.75	575.15	1.07	MWD	LEAM DRILLING SYSTEMS
9/9/2014	9,559.00	2.60	70.60	9,523.65	53.73	-31.51	578.58	0.84	MWD	LEAM DRILLING SYSTEMS
9/9/2014	9,653.00	1.10	45.50	9,617.60	55.44	-30.17	581.23	1.78	MWD	LEAM DRILLING SYSTEMS
9/9/2014	9,748.00	1.10	320.90	9,712.59	56.79	-28.82	581.31	1.56	MWD	LEAM DRILLING SYSTEMS
9/9/2014	9,842.00	1.20	301.10	9,808.57	57.78	-27.61	579.90	0.43	MWD	LEAM DRILLING SYSTEMS
9/10/2014	9,872.00	1.10	296.90	9,836.56	57.99	-27.32	579.37	0.44	MWD	LEAM DRILLING SYSTEMS
9/11/2014	9,916.00	1.10	299.00	9,880.55	58.27	-26.93	578.63	0.09	MWD	LEAM DRILLING SYSTEMS
9/11/2014	9,947.00	1.80	344.20	9,911.55	58.82	-26.31	578.23	4.16	MWD	LEAM DRILLING SYSTEMS
9/11/2014	9,979.00	6.20	0.10	9,943.46	60.99	-24.10	578.10	14.05	MWD	LEAM DRILLING SYSTEMS
9/11/2014	10,010.00	10.20	3.30	9,974.14	65.38	-19.68	578.26	12.98	MWD	LEAM DRILLING SYSTEMS
9/12/2014	10,052.00	15.40	3.00	10,015.08	74.64	-10.40	578.77	12.38	MWD	LEAM DRILLING SYSTEMS
9/11/2014	10,073.00	17.40	4.20	10,035.22	80.55	-4.48	579.14	9.66	MWD	LEAM DRILLING SYSTEMS
9/11/2014	10,095.00	18.70	5.90	10,056.14	87.35	2.31	579.75	6.38	MWD	LEAM DRILLING SYSTEMS
9/11/2014	10,127.00	21.50	3.70	10,086.19	98.32	13.27	580.65	9.06	MWD	LEAM DRILLING SYSTEMS
9/11/2014	10,159.00	25.80	0.70	10,115.50	111.07	26.09	581.12	13.95	MWD	LEAM DRILLING SYSTEMS
9/11/2014	10,191.00	30.10	0.70	10,143.76	125.93	41.08	581.30	13.44	MWD	LEAM DRILLING SYSTEMS
9/11/2014	10,222.00	35.00	0.30	10,169.88	142.45	57.75	581.44	15.82	MWD	LEAM DRILLING SYSTEMS
9/11/2014	10,254.00	40.10	360.00	10,195.24	161.74	77.25	581.49	15.95	MWD	LEAM DRILLING SYSTEMS
9/11/2014	10,285.00	45.40	0.30	10,218.00	182.55	98.29	581.55	17.11	MWD	LEAM DRILLING SYSTEMS
9/11/2014	10,316.00	51.00	0.10	10,238.65	205.42	121.39	581.63	18.07	MWD	LEAM DRILLING SYSTEMS
9/11/2014	10,348.00	54.80	0.30	10,257.95	230.67	146.90	581.72	11.89	MWD	LEAM DRILLING SYSTEMS
9/11/2014	10,380.00	57.30	0.90	10,275.82	256.97	173.44	582.00	7.97	MWD	LEAM DRILLING SYSTEMS
9/11/2014	10,411.00	59.00	1.00	10,292.18	283.07	199.77	582.43	5.49	MWD	LEAM DRILLING SYSTEMS
9/11/2014	10,443.00	61.60	1.40	10,308.03	310.65	227.56	583.02	8.20	MWD	LEAM DRILLING SYSTEMS
9/11/2014	10,474.00	65.10	2.80	10,321.94	338.18	255.24	584.04	11.99	MWD	LEAM DRILLING SYSTEMS
9/11/2014	10,506.00	67.80	2.10	10,334.72	367.35	284.55	585.29	8.67	MWD	LEAM DRILLING SYSTEMS
9/11/2014	10,537.00	69.50	1.40	10,346.01	396.02	313.41	586.17	5.87	MWD	LEAM DRILLING SYSTEMS
9/11/2014	10,569.00	70.40	2.30	10,356.98	425.89	343.45	587.14	3.86	MWD	LEAM DRILLING SYSTEMS
9/11/2014	10,600.00	74.20	1.90	10,366.40	455.23	372.96	588.22	12.32	MWD	LEAM DRILLING SYSTEMS
9/11/2014	10,632.00	79.80	0.70	10,373.60	486.16	404.12	588.92	17.88	MWD	LEAM DRILLING SYSTEMS
9/11/2014	10,663.00	84.90	359.10	10,377.72	516.53	434.83	588.87	17.23	MWD	LEAM DRILLING SYSTEMS
9/14/2014	10,721.00	91.70	358.20	10,379.44	573.63	492.75	587.50	11.83	MWD	LEAM DRILLING SYSTEMS
9/14/2014	10,816.00	90.00	0.90	10,378.03	667.46	587.73	586.76	3.36	MWD	LEAM DRILLING SYSTEMS
9/14/2014	10,911.00	91.50	0.70	10,376.79	761.61	682.71	588.08	1.59	MWD	LEAM DRILLING SYSTEMS
9/14/2014	11,006.00	90.10	1.40	10,375.46	855.81	777.68	589.82	1.65	MWD	LEAM DRILLING SYSTEMS
9/14/2014	11,100.00	89.80	1.60	10,375.54	949.12	871.65	592.28	0.38	MWD	LEAM DRILLING SYSTEMS
9/14/2014	11,195.00	92.60	3.30	10,373.55	1,043.57	966.53	596.34	3.45	MWD	LEAM DRILLING SYSTEMS
9/14/2014	11,289.00	90.80	3.00	10,370.77	1,137.12	1,060.34	601.51	1.94	MWD	LEAM DRILLING SYSTEMS
9/14/2014	11,384.00	91.60	3.50	10,368.78	1,231.71	1,155.16	606.89	0.99	MWD	LEAM DRILLING SYSTEMS
9/15/2014	11,573.00	88.70	3.50	10,368.28	1,419.99	1,343.79	618.43	1.53	MWD	LEAM DRILLING SYSTEMS
9/16/2014	11,670.00	88.70	3.70	10,370.48	1,516.62	1,440.57	624.52	0.21	MWD	LEAM DRILLING SYSTEMS
9/16/2014	11,764.00	87.20	3.30	10,373.84	1,610.21	1,534.34	630.25	1.65	MWD	LEAM DRILLING SYSTEMS
9/16/2014	11,859.00	87.20	1.90	10,378.49	1,704.60	1,629.12	634.56	1.47	MWD	LEAM DRILLING SYSTEMS
9/16/2014	11,954.00	87.10	2.10	10,383.21	1,798.88	1,723.95	637.87	0.24	MWD	LEAM DRILLING SYSTEMS
9/16/2014	12,048.00	87.10	2.40	10,387.96	1,892.22	1,817.75	641.55	0.32	MWD	LEAM DRILLING SYSTEMS
9/16/2014	12,143.00	88.10	0.30	10,391.94	1,986.40	1,912.64	643.79	2.45	MWD	LEAM DRILLING SYSTEMS
9/16/2014	12,237.00	90.60	0.70	10,393.01	2,079.49	2,006.62	644.61	2.69	MWD	LEAM DRILLING SYSTEMS

COTTON DRAW UNIT 217H

WEST UNRESTRICTED

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Directional Survey

District DELAWARE BASIN	County EDDY	Field Name PADUCA	Project Group DELAWARE BASIN REG	State/Province NM
Surface Legal Location Sec. 3, T25S R31E	API/UWI 3001542318	Latitude (") 32° 9' 10.049" N	Longitude (") 103° 45' 42.252" W	Ground Elev... 3,425.20
			KB - GL (ft) 25.00	Orig KB Elev (ft) 3,450.20
				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
9/16/2014	12,332.00	90.70	1.20	10,391.93	2,173.67	2,101.60	646.18	0.54	MWD	LEAM DRILLING SYSTEMS
9/16/2014	12,427.00	90.90	1.60	10,390.61	2,267.95	2,196.56	648.50	0.47	MWD	LEAM DRILLING SYSTEMS
9/16/2014	12,522.00	91.00	1.20	10,389.03	2,362.22	2,291.52	650.82	0.43	MWD	LEAM DRILLING SYSTEMS
9/16/2014	12,616.00	91.70	1.00	10,386.82	2,455.42	2,385.48	652.63	0.77	MWD	LEAM DRILLING SYSTEMS
9/16/2014	12,711.00	91.30	1.00	10,384.33	2,549.59	2,480.43	654.29	0.42	MWD	LEAM DRILLING SYSTEMS
9/16/2014	12,805.00	90.00	359.80	10,383.26	2,642.66	2,574.42	654.94	1.88	MWD	LEAM DRILLING SYSTEMS
9/16/2014	12,899.00	90.70	0.30	10,382.69	2,735.65	2,668.42	655.02	0.92	MWD	LEAM DRILLING SYSTEMS
9/16/2014	12,994.00	91.20	0.90	10,381.11	2,829.75	2,763.40	656.02	0.82	MWD	LEAM DRILLING SYSTEMS
9/16/2014	13,085.00	90.10	0.50	10,380.08	2,919.91	2,854.38	657.13	1.29	MWD	LEAM DRILLING SYSTEMS
9/16/2014	13,184.00	91.60	0.70	10,378.61	3,017.97	2,953.36	658.17	1.53	MWD	LEAM DRILLING SYSTEMS
9/17/2014	13,278.00	89.90	0.50	10,377.38	3,111.08	3,047.35	659.15	1.82	MWD	LEAM DRILLING SYSTEMS
9/17/2014	13,372.00	91.20	1.00	10,376.48	3,204.23	3,141.33	660.38	1.48	MWD	LEAM DRILLING SYSTEMS
9/17/2014	13,467.00	92.20	2.10	10,373.66	3,298.50	3,236.25	662.95	1.56	MWD	LEAM DRILLING SYSTEMS
9/17/2014	13,562.00	93.00	2.10	10,369.35	3,392.82	3,331.09	666.43	0.84	MWD	LEAM DRILLING SYSTEMS
9/17/2014	13,656.00	92.60	2.30	10,364.76	3,486.15	3,424.91	670.03	0.48	MWD	LEAM DRILLING SYSTEMS
9/17/2014	13,751.00	92.60	2.40	10,360.45	3,580.52	3,519.73	673.92	0.11	MWD	LEAM DRILLING SYSTEMS
9/17/2014	13,846.00	92.90	2.60	10,355.89	3,674.90	3,614.53	678.06	0.38	MWD	LEAM DRILLING SYSTEMS
9/17/2014	13,941.00	89.40	3.00	10,353.99	3,769.41	3,709.38	682.70	3.71	MWD	LEAM DRILLING SYSTEMS
9/17/2014	14,036.00	90.40	2.80	10,354.15	3,863.96	3,804.26	687.51	1.07	MWD	LEAM DRILLING SYSTEMS
9/17/2014	14,131.00	91.10	3.80	10,352.91	3,958.57	3,899.09	692.98	1.28	MWD	LEAM DRILLING SYSTEMS
9/17/2014	14,225.00	89.70	2.30	10,352.25	4,052.15	3,992.95	697.98	2.18	MWD	LEAM DRILLING SYSTEMS
9/17/2014	14,320.00	89.70	2.80	10,352.75	4,146.65	4,087.86	702.20	0.53	MWD	LEAM DRILLING SYSTEMS
9/17/2014	14,415.00	90.00	3.10	10,353.00	4,241.21	4,182.73	707.09	0.45	MWD	LEAM DRILLING SYSTEMS
9/18/2014	14,509.00	88.20	3.10	10,354.47	4,334.79	4,276.58	712.17	1.91	MWD	LEAM DRILLING SYSTEMS
9/18/2014	14,604.00	88.70	3.50	10,357.04	4,429.37	4,371.39	717.64	0.67	MWD	LEAM DRILLING SYSTEMS
9/18/2014	14,699.00	89.20	3.00	10,358.79	4,523.97	4,466.22	723.03	0.74	MWD	LEAM DRILLING SYSTEMS
9/18/2014	14,793.00	90.70	2.80	10,358.87	4,617.52	4,560.09	727.78	1.61	MWD	LEAM DRILLING SYSTEMS
9/18/2014	14,888.00	89.20	3.50	10,358.95	4,712.12	4,654.95	733.00	1.74	MWD	LEAM DRILLING SYSTEMS
9/18/2014	14,926.00	89.30	3.80	10,359.45	4,749.98	4,692.87	735.42	0.83	MWD	LEAM DRILLING SYSTEMS
9/18/2014	14,984.00	89.30	3.80	10,360.16	4,807.79	4,750.73	739.26	0.00	BIT	LEAM DRILLING SYSTEMS