



Directional Survey

DELAWARE BASIN WEST UNRESTRICTED

Well Name: COTTON DRAW UNIT 252H

Sub-Division DELAWARE BASIN WEST		Region BASIN WEST		Field Name PADUCA		County LEA		State/Province NM					
Surface Legal Location SEC7 T25S R32E		API#/X/Y 3002542619		Latitude (°) 32° 9' 6.501" N		Longitude (°) 103° 42' 41.512" W		Orig KB Elevation (ft) 3,474.70		Ground Elev MSL (ft) 3,447.70		KB - GL (ft) 27.00	
Wellbores													
Wellbore Name OH		Parent Wellbore OH			SAP Well ID 38527				Vertical Section Direction (°) 182.20				
Kick Offs & Key Depths													
Date 6/16/2015				Type CURVE				Top Depth (ft) 7,762.0					
Actual Deviation Survey				Definitive? No		Proposed? No		Proposed Deviation Survey					
EXTREME, Proposed? No													
Deviation Survey													
Date 6/7/2015		Description EXTREME											
MD Tie In (ft) 0.00		TVD Tie In (ft) 0.00		Inclination Tie In (°) 0.00		Azimuth Tie In (°) 0.00		NSTie In (ft) 0.00		EWtie In (ft) 0.00			
Survey Data													
Date	MD (ft)	Incl (°)	Azm (°)	TVD (ft)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company			
6/12/2015	135.00	0.70	246.50	135.00	0.36	-0.33	-0.76	0.52	MWD	EXTREME			
6/12/2015	235.00	0.88	247.29	234.99	0.95	-0.87	-2.02	0.18	MWD	EXTREME			
6/12/2015	358.00	0.70	257.49	357.98	1.53	-1.40	-3.63	0.19	MWD	EXTREME			
6/12/2015	547.00	1.32	246.37	546.95	2.78	-2.52	-6.75	0.34	MWD	EXTREME			
6/12/2015	643.00	1.00	249.97	642.93	3.57	-3.25	-8.55	0.34	MWD	EXTREME			
6/12/2015	770.00	0.70	249.10	769.91	4.30	-3.91	-10.32	0.24	MWD	EXTREME			
6/12/2015	966.00	0.21	214.50	965.90	5.07	-4.63	-11.64	0.28	MWD	EXTREME			
6/12/2015	1,140.00	0.22	195.60	1,139.90	5.67	-5.21	-11.91	0.04	MWD	EXTREME			
6/12/2015	1,330.00	0.31	179.97	1,329.90	6.53	-6.08	-12.01	0.06	MWD	EXTREME			
6/12/2015	1,520.00	0.09	150.00	1,519.90	7.17	-6.72	-11.93	0.12	MWD	EXTREME			
6/12/2015	1,710.00	0.09	88.48	1,709.90	7.29	-6.85	-11.71	0.05	MWD	EXTREME			
6/12/2015	1,900.00	0.79	40.88	1,899.89	6.26	-5.85	-10.70	0.39	MWD	EXTREME			
6/12/2015	2,091.00	0.48	36.71	2,090.88	4.57	-4.22	-9.36	0.16	MWD	EXTREME			
6/12/2015	2,281.00	1.32	39.30	2,280.86	2.17	-1.88	-7.50	0.44	MWD	EXTREME			
6/12/2015	2,471.00	3.21	52.31	2,470.70	-2.99	3.06	-1.90	1.02	MWD	EXTREME			
6/12/2015	2,661.00	4.79	53.67	2,660.23	-11.34	11.01	8.70	0.83	MWD	EXTREME			
6/12/2015	2,851.00	5.10	57.68	2,849.52	-21.07	20.23	22.22	0.24	MWD	EXTREME			
6/12/2015	3,041.00	5.41	56.16	3,038.73	-31.12	29.73	36.80	0.18	MWD	EXTREME			
6/12/2015	3,136.00	5.32	60.88	3,133.31	-36.05	34.37	44.37	0.47	MWD	EXTREME			
6/12/2015	3,326.00	6.02	56.88	3,322.38	-46.39	44.10	60.41	0.42	MWD	EXTREME			
6/12/2015	3,517.00	6.42	53.98	3,512.26	-58.78	55.85	77.43	0.27	MWD	EXTREME			
6/12/2015	3,707.00	6.90	49.19	3,700.97	-73.14	69.56	94.66	0.39	MWD	EXTREME			
6/12/2015	3,896.00	6.59	48.09	3,888.67	-88.43	84.22	111.33	0.18	MWD	EXTREME			
6/12/2015	4,005.00	6.00	48.98	3,997.01	-96.69	92.14	120.28	0.55	MWD	EXTREME			
6/12/2015	4,182.00	5.71	49.88	4,173.09	-108.95	103.88	133.99	0.17	MWD	EXTREME			
6/12/2015	4,277.00	4.31	57.41	4,267.72	-114.17	108.85	140.61	1.63	MWD	EXTREME			
6/12/2015	4,461.00	3.21	52.40	4,451.32	-121.41	115.72	150.52	0.62	MWD	EXTREME			
6/12/2015	4,569.00	2.50	54.90	4,559.19	-124.78	118.92	154.84	0.67	MWD	EXTREME			
6/12/2015	4,759.00	2.50	56.40	4,749.01	-129.71	123.60	161.69	0.03	MWD	EXTREME			
6/12/2015	4,949.00	2.29	56.40	4,938.84	-134.36	127.99	168.30	0.11	MWD	EXTREME			
6/12/2015	5,139.00	2.11	57.49	5,128.70	-138.57	131.97	174.41	0.10	MWD	EXTREME			
6/12/2015	5,330.00	1.71	55.91	5,319.59	-142.26	135.46	179.74	0.21	MWD	EXTREME			
6/12/2015	5,520.00	1.41	56.09	5,509.52	-145.31	138.35	184.02	0.16	MWD	EXTREME			
6/12/2015	5,615.00	1.41	58.11	5,604.50	-146.66	139.62	185.99	0.05	MWD	EXTREME			
6/12/2015	5,710.00	1.41	53.10	5,699.47	-148.05	140.94	187.91	0.13	MWD	EXTREME			
6/12/2015	5,805.00	1.41	49.28	5,794.44	-149.58	142.40	189.73	0.10	MWD	EXTREME			
6/12/2015	5,900.00	1.41	48.97	5,889.41	-151.18	143.93	191.50	0.01	MWD	EXTREME			
6/12/2015	5,995.00	1.49	48.88	5,984.38	-152.83	145.51	193.31	0.08	MWD	EXTREME			
6/12/2015	6,090.00	1.41	56.70	6,079.35	-154.35	146.97	195.22	0.22	MWD	EXTREME			
6/12/2015	6,185.00	1.49	56.40	6,174.32	-155.75	148.29	197.23	0.08	MWD	EXTREME			
6/12/2015	6,280.00	1.41	49.19	6,269.29	-157.27	149.74	199.14	0.21	MWD	EXTREME			
6/12/2015	6,375.00	1.41	67.07	6,364.26	-158.57	150.96	201.10	0.46	MWD	EXTREME			
6/12/2015	6,470.00	1.32	75.29	6,459.23	-159.38	151.69	203.24	0.23	MWD	EXTREME			
6/12/2015	6,565.00	1.58	78.50	6,554.20	-160.01	152.23	205.58	0.29	MWD	EXTREME			
6/12/2015	6,659.00	1.71	80.08	6,648.16	-160.61	152.73	208.23	0.15	MWD	EXTREME			
6/12/2015	6,755.00	1.19	84.30	6,744.13	-161.05	153.08	210.63	0.55	MWD	EXTREME			
6/12/2015	6,850.00	1.41	85.46	6,839.11	-161.32	153.27	212.78	0.23	MWD	EXTREME			
6/12/2015	7,040.00	1.01	167.58	7,029.08	-159.98	151.82	215.47	0.85	MWD	EXTREME			
6/12/2015	7,230.00	1.01	130.79	7,219.05	-157.31	149.09	217.10	0.34	MWD	EXTREME			
6/12/2015	7,421.00	1.01	136.07	7,410.02	-155.09	146.77	219.54	0.05	MWD	EXTREME			
6/12/2015	7,516.00	1.19	147.98	7,505.00	-153.70	145.34	220.64	0.31	MWD	EXTREME			
6/12/2015	7,665.00	1.19	160.59	7,653.97	-150.98	142.56	221.98	0.18	MWD	EXTREME			
6/12/2015	7,719.00	1.09	175.50	7,707.96	-149.95	141.52	222.21	0.58	MWD	EXTREME			
6/12/2015	7,751.00	1.58	180.57	7,739.95	-149.21	140.78	222.22	1.57	MWD	EXTREME			
6/12/2015	7,782.00	4.45	191.29	7,770.90	-147.59	139.17	221.98	9.39	MWD	EXTREME			
6/12/2015	7,814.00	8.24	196.40	7,802.70	-144.14	135.75	221.09	11.96	MWD	EXTREME			
6/12/2015	7,846.00	12.43	197.84	7,834.18	-138.60	130.27	219.39	13.12	MWD	EXTREME			
6/12/2015	7,877.00	16.80	197.52	7,864.17	-131.06	122.82	217.02	14.10	MWD	EXTREME			
6/12/2015	7,909.00	20.41	196.55	7,894.49	-121.19	113.06	214.04	11.32	MWD	EXTREME			
6/12/2015	7,941.00	24.80	195.04	7,924.02	-109.24	101.22	210.70	13.84	MWD	EXTREME			
6/12/2015	7,972.00	28.72	193.81	7,951.70	-95.60	87.71	207.24	12.77	MWD	EXTREME			
6/12/2015	8,004.00	32.12	192.70	7,979.29	-79.70	71.94	203.53	10.77	MWD	EXTREME			
6/12/2015	8,036.00	36.95	192.40	8,005.64	-61.86	54.23	199.59	15.10	MWD	EXTREME			
6/12/2015	8,067.00	41.57	191.92	8,029.64	-42.54	35.06	195.47	14.94	MWD	EXTREME			
6/12/2015	8,099.00	45.69	191.91	8,052.80	-20.78	13.46	190.91	12.88	MWD	EXTREME			
6/12/2015	8,131.00	48.67	191.92	8,074.54	2.35	-9.50	186.06	9.31	MWD	EXTREME			

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Well Name: COTTON DRAW UNIT 252H

Sub-Division		Region	Field Name		County	State/Province				
DELAWARE BASIN WEST		BASIN WEST	PADUCA		LEA	NM				
Surface Legal Location		APRN/A	Latitude (°)	Longitude (°)	Orig KB Elevation (ft)	Ground Elev MSL (ft)	KB - GL (ft)			
SEC7 T25S R32E		3002542619	32° 9' 6.501" N	103° 42' 41.512" W	3,474.70	3,447.70	27.00			
Survey Data										
Date	MD (ft)	Incl (°)	Azm (°)	TVD (ft)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
6/12/2015	8,163.00	51.03	192.09	8,095.18	26.45	-33.43	180.97	7.39	MWD	EXTREME
6/12/2015	8,194.00	53.50	191.40	8,114.15	50.63	-57.43	175.99	8.16	MWD	EXTREME
6/12/2015	8,226.00	55.33	192.24	8,132.77	76.29	-82.90	170.65	6.10	MWD	EXTREME
6/12/2015	8,258.00	57.35	194.34	8,150.50	102.42	-108.81	164.53	8.35	MWD	EXTREME
6/12/2015	8,289.00	59.41	196.41	8,166.76	128.12	-134.26	157.52	8.75	MWD	EXTREME
6/12/2015	8,321.00	63.01	198.11	8,182.17	155.19	-161.04	149.20	12.17	MWD	EXTREME
6/12/2015	8,353.00	66.03	199.02	8,195.93	182.90	-188.42	140.00	9.78	MWD	EXTREME
6/12/2015	8,384.00	68.67	199.84	8,207.87	210.22	-215.39	130.48	8.86	MWD	EXTREME
6/12/2015	8,416.00	72.75	199.63	8,218.44	239.02	-243.82	120.29	12.77	MWD	EXTREME
6/12/2015	8,448.00	76.95	199.57	8,226.80	268.49	-272.91	109.93	13.13	MWD	EXTREME
6/12/2015	8,480.00	81.72	199.12	8,232.72	298.53	-302.57	99.51	14.97	MWD	EXTREME
6/12/2015	8,511.00	86.29	197.04	8,235.96	328.17	-331.87	89.95	16.18	MWD	EXTREME
6/12/2015	8,543.00	89.37	193.82	8,237.17	359.29	-362.69	81.45	13.92	MWD	EXTREME
6/12/2015	8,575.00	90.77	190.83	8,237.13	390.79	-393.95	74.62	10.32	MWD	EXTREME
6/12/2015	8,614.00	91.82	187.43	8,236.25	429.49	-432.44	68.43	9.12	MWD	EXTREME
6/12/2015	8,646.00	92.94	186.65	8,234.92	461.35	-464.17	64.51	4.26	MWD	EXTREME
6/12/2015	8,677.00	93.85	186.50	8,233.08	492.20	-494.91	60.97	2.97	MWD	EXTREME
6/12/2015	8,709.00	94.19	185.93	8,230.84	524.05	-526.64	57.51	2.07	MWD	EXTREME
6/12/2015	8,741.00	94.68	185.28	8,228.37	555.89	-558.39	54.40	2.54	MWD	EXTREME
6/12/2015	8,772.00	94.68	184.28	8,225.84	586.76	-589.18	51.82	3.22	MWD	EXTREME
6/12/2015	8,804.00	94.55	183.13	8,223.26	618.64	-621.01	49.76	3.61	MWD	EXTREME
6/12/2015	8,836.00	93.92	181.28	8,220.90	650.55	-652.90	48.53	6.09	MWD	EXTREME
6/12/2015	8,868.00	93.36	179.79	8,218.67	682.47	-684.83	48.23	4.97	MWD	EXTREME
6/12/2015	8,899.00	93.22	179.20	8,217.09	713.39	-715.78	48.51	1.95	MWD	EXTREME
6/12/2015	8,931.00	92.24	178.29	8,215.56	745.29	-747.73	49.21	4.18	MWD	EXTREME
6/12/2015	8,963.00	90.77	177.13	8,214.72	777.18	-779.70	50.49	5.85	MWD	EXTREME
6/12/2015	8,994.00	89.23	176.66	8,214.72	808.05	-810.65	52.18	5.19	MWD	EXTREME
6/12/2015	9,026.00	87.41	176.07	8,215.66	839.87	-842.57	54.19	5.98	MWD	EXTREME
6/12/2015	9,058.00	85.94	176.89	8,217.52	871.65	-874.45	56.15	5.26	MWD	EXTREME
6/12/2015	9,090.00	84.88	177.38	8,220.08	903.43	-906.31	57.75	3.65	MWD	EXTREME
6/12/2015	9,121.00	85.73	178.96	8,222.62	934.24	-937.19	58.73	5.77	MWD	EXTREME
6/12/2015	9,153.00	86.57	181.26	8,224.76	966.15	-969.12	58.67	7.64	MWD	EXTREME
6/12/2015	9,185.00	86.99	182.02	8,226.58	998.10	-1,001.05	57.76	2.71	MWD	EXTREME
6/12/2015	9,216.00	87.83	182.71	8,227.96	1,029.06	-1,031.99	56.48	3.51	MWD	EXTREME
6/12/2015	9,248.00	89.09	182.61	8,228.82	1,061.05	-1,063.95	55.00	3.95	MWD	EXTREME
6/12/2015	9,280.00	90.28	183.44	8,229.00	1,093.05	-1,095.90	53.31	4.53	MWD	EXTREME
6/12/2015	9,343.00	90.63	184.29	8,228.50	1,156.02	-1,158.75	49.06	1.46	MWD	EXTREME
6/12/2015	9,438.00	90.56	184.63	8,227.51	1,250.94	-1,253.46	41.67	0.37	MWD	EXTREME
6/12/2015	9,533.00	90.91	184.91	8,226.29	1,345.83	-1,348.12	33.78	0.47	MWD	EXTREME
6/12/2015	9,628.00	90.91	184.27	8,224.78	1,440.74	-1,442.81	26.17	0.67	MWD	EXTREME
6/12/2015	9,723.00	90.56	184.08	8,223.57	1,535.67	-1,537.55	19.26	0.42	MWD	EXTREME
6/12/2015	9,818.00	90.49	184.15	8,222.69	1,630.62	-1,632.30	12.44	0.10	MWD	EXTREME
6/12/2015	9,913.00	89.51	184.40	8,222.69	1,725.55	-1,727.03	5.36	1.06	MWD	EXTREME
6/12/2015	10,008.00	90.77	185.02	8,222.46	1,820.46	-1,821.71	-2.44	1.48	MWD	EXTREME
6/12/2015	10,103.00	90.21	185.76	8,221.65	1,915.31	-1,916.28	-11.36	0.98	MWD	EXTREME
6/12/2015	10,199.00	89.72	185.95	8,221.71	2,011.11	-2,011.78	-21.16	0.55	MWD	EXTREME
6/12/2015	10,294.00	89.93	186.87	8,222.00	2,105.86	-2,106.19	-31.76	0.99	MWD	EXTREME
6/12/2015	10,389.00	89.86	185.66	8,222.17	2,200.61	-2,200.62	-42.13	1.28	MWD	EXTREME
6/12/2015	10,484.00	90.56	186.48	8,221.83	2,295.40	-2,295.08	-52.18	1.13	MWD	EXTREME
6/12/2015	10,579.00	90.14	185.41	8,221.24	2,390.19	-2,389.57	-62.01	1.21	MWD	EXTREME
6/12/2015	10,674.00	89.86	184.85	8,221.24	2,485.06	-2,484.19	-70.51	0.66	MWD	EXTREME
6/12/2015	10,769.00	90.42	183.74	8,221.01	2,580.00	-2,578.92	-77.62	1.31	MWD	EXTREME
6/12/2015	10,864.00	91.19	183.69	8,219.68	2,674.96	-2,673.71	-83.78	0.81	MWD	EXTREME
6/12/2015	10,959.00	89.30	182.45	8,219.27	2,769.94	-2,768.57	-88.87	2.38	MWD	EXTREME
6/12/2015	11,054.00	89.86	182.93	8,219.97	2,864.93	-2,863.46	-93.32	0.78	MWD	EXTREME
6/12/2015	11,149.00	89.86	183.49	8,220.20	2,959.92	-2,958.31	-98.64	0.59	MWD	EXTREME
6/12/2015	11,244.00	90.42	183.41	8,219.97	3,054.89	-3,053.14	-104.36	0.60	MWD	EXTREME
6/12/2015	11,339.00	91.33	183.79	8,218.52	3,149.85	-3,147.94	-110.32	1.04	MWD	EXTREME
6/12/2015	11,434.00	91.68	183.19	8,216.02	3,244.79	-3,242.73	-116.11	0.73	MWD	EXTREME
6/12/2015	11,529.00	91.26	182.28	8,213.59	3,339.76	-3,337.59	-120.64	1.05	MWD	EXTREME
6/12/2015	11,624.00	89.23	179.99	8,213.18	3,434.73	-3,432.56	-122.52	3.22	MWD	EXTREME
6/12/2015	11,719.00	89.93	180.08	8,213.88	3,529.66	-3,527.55	-122.58	0.74	MWD	EXTREME
6/12/2015	11,814.00	90.91	180.74	8,213.18	3,624.61	-3,622.55	-123.26	1.24	MWD	EXTREME
6/12/2015	11,909.00	90.91	181.15	8,211.67	3,719.57	-3,717.52	-124.82	0.43	MWD	EXTREME
6/12/2015	12,004.00	89.93	180.71	8,210.97	3,814.55	-3,812.50	-126.36	1.13	MWD	EXTREME
6/12/2015	12,099.00	89.93	179.74	8,211.09	3,909.49	-3,907.50	-126.74	1.02	MWD	EXTREME
6/12/2015	12,194.00	88.88	181.12	8,212.08	4,004.43	-4,002.49	-127.45	1.83	MWD	EXTREME
6/12/2015	12,290.00	90.28	182.38	8,212.78	4,100.42	-4,098.44	-130.38	1.96	MWD	EXTREME
6/12/2015	12,385.00	90.14	182.29	8,212.43	4,195.42	-4,193.36	-134.25	0.18	MWD	EXTREME
6/12/2015	12,480.00	91.40	183.71	8,211.16	4,290.40	-4,288.22	-139.22	2.00	MWD	EXTREME
6/12/2015	12,575.00	91.68	182.86	8,208.60	4,385.35	-4,383.03	-144.67	0.94	MWD	EXTREME
6/12/2015	12,670.00	91.68	183.04	8,205.82	4,480.30	-4,477.86	-149.55	0.19	MWD	EXTREME
6/12/2015	12,765.00	92.31	182.96	8,202.51	4,575.23	-4,572.67	-154.52	0.67	MWD	EXTREME
6/12/2015	12,860.00	90.91	183.14	8,199.84	4,670.18	-4,667.50	-159.57	1.49	MWD	EXTREME
6/12/2015	12,954.00	89.79	181.82	8,199.27	4,764.18	-4,761.40	-163.64	1.84	MWD	EXTREME
6/12/2015	13,024.00	89.79	181.82	8,199.52	4,834.17	-4,831.37	-165.86	0.00	BIT	EXTREME



Weatherford

Evaluation, Drilling & Intervention
10000 West County Rd. 116
P.O. Box 61028
Midland, TX USA 79711
Tel. (432) 561-8892 Fax (432) 561-8895

Devon Energy
333 W. Sherridan Ave
Oklahoma City, OK, 73102

Date: June 27, 2015

Attention: Rob Schwartz

HOBBS OCD

Re: Devon Energy
Well: Cotton Draw 252H
Eddy County, New Mexico

JUN 20 2016

RECEIVED

Enclosed, please find the original survey performed on the referenced well by Precision Energy Services, Inc. (P-5 No. 676004), a Weatherford company. Other information required by your office is as follows:

Name & Title Of Surveyor	Well Number	Surveyed Depths	Dates Performed	Type of Survey
Justin Nyguen MWD Supervisor	252H	7719 MD 12954 MD	6/14/2015 6/24/2015	Measurement While Drilling

A notarized plan vs. actual is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.

Jesus Aguilar
MWD Coordinator

On this, the 9th day of July, 2015, before me a notary public, the undersigned officer, personally appeared Jesus Aguilar, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same for the purposes therein contained.

In witness hereof, I hereunto set my hand and official seal.

Notary Public



HOBBS OCD

JUN 20 2016

5D Survey Report

RECEIVED

Devon Energy

Field Name: *Lea Co, NM Nad 83 NMEZ*

Site Name: *Cotton Draw Unit 252H*

Well Name: *Cotton Draw Unit 252H*

Survey: *Wft MWD Svy*

23 June 2015



Weatherford®

Cotton Draw Unit 252H

Field Name	Map Units : US ft		Company Name : Devon Energy	
	Vertical Reference Datum (VRD) : Mean Sea Level			
	Projected Coordinate System : NAD83 / New Mexico East (ftUS)			
	Comment :			
Site Name	Units : US ft	North Reference : Grid	Convergence Angle : 0.33	
	Position	Northing : 419518.01 US ft	Latitude : 32° 9' 6.50"	
		Easting : 733772.13 US ft	Longitude : -103° 42' 41.51"	
	Elevation above Mean Sea Level:3448.00 US ft			
Comment :				
Slot Name	Position (Offsets relative to Site Centre)			
	+N / -S : 0.00 US ft	Northing :419518.01 US ft	Latitude : 32°9'6.50"	
	+E / -W : 0.00 US ft	Easting :733772.13 US ft	Longitude : -103°42'41.51"	
	Slot TVD Reference : Ground Elevation			
Cotton Draw Unit 252H	Elevation above Mean Sea Level : 3448.00 US ft			
	Comment :			
	Type : Main well	UWI :		
	Rig Height <i>Kelly Bushing</i> : 27.00 US ft	Comment :		
Well Name	Relative to Mean Sea Level: 3475.00 US ft			
	Closure Distance : 4834.21 US ft		Closure Azimuth : 181.966°	
	Vertical Section (Position of Origin Relative to Slot)			
	+N / -S : 0.00 US ft	+E / -W : 0.00 US ft	Az :182.20°	

Survey Name : Wft MWD Svy

Date : 17/Jun/2015	Survey Tool : MWD	Comment :	Company :
Magnetic Model			
Model Name: BGGM	Date: 20/Jun/2015	Field Strength: 48185.3 nT	Declination: 7.34° Dip: 60.05°
Tie Point MD: 7665	Inclination: 1.19	Azimuth: 160.59	TVD: 7653.97 North Offset: 142.564 East Offset: 221.978

Well path created using minimum curvature

Survey Points (Relative to Slot centre, TVD relative to Kelly Bushing)										
MD (US ft)	Incl (°)	Az (°)	TVD (US ft)	N Offset (US ft)	E Offset (US ft)	VS (US ft)	DLS (°/100 US ft)	Northing (US ft)	Easting (US ft)	Comment
7665.00	1.19	160.59	7653.97	142.56	221.98	-150.98	0.00	419660.57	733994.11	Tie On Extreme
7719.00	1.09	175.50	7707.96	141.52	222.21	-149.95	0.58	419659.53	733994.34	First Wft Svy
7751.00	1.58	180.57	7739.95	140.78	222.22	-149.21	1.57	419658.79	733994.35	
7782.00	4.45	191.29	7770.90	139.17	221.98	-147.59	9.39	419657.18	733994.11	
7814.00	8.24	196.40	7802.70	135.75	221.09	-144.14	11.96	419653.76	733993.22	
7846.00	12.43	197.84	7834.18	130.27	219.39	-138.60	13.12	419648.28	733991.52	
7877.00	16.80	197.52	7864.17	122.82	217.02	-131.06	14.10	419640.83	733989.15	
7909.00	20.41	196.55	7894.49	113.06	214.04	-121.19	11.32	419631.07	733986.17	
7941.00	24.80	195.04	7924.02	101.22	210.70	-109.24	13.84	419619.23	733982.83	
7972.00	28.72	193.81	7951.70	87.71	207.24	-95.60	12.77	419605.72	733979.37	
8004.00	32.12	192.70	7979.29	71.94	203.53	-79.70	10.77	419589.95	733975.66	
8036.00	36.95	192.40	8005.64	54.23	199.59	-61.86	15.10	419572.24	733971.72	

Survey Points (Relative to Slot centre, TVD relative to Kelly Bushing)										
Pa (US ft)	Pr (ft)	A (ft)	TVD (US ft)	Offset (US ft)	Offset (US ft)	VS (US ft)	BLS (%/100 US ft)	Nothing (US ft)	Easting (US ft)	Comment
8067.00	41.57	191.92	8029.64	35.06	195.47	-42.54	14.94	419553.07	733967.60	
8099.00	45.69	191.91	8052.80	13.46	190.91	-20.78	12.88	419531.47	733963.04	
8131.00	48.67	191.92	8074.54	-9.50	186.06	2.35	9.31	419508.51	733958.19	
8163.00	51.03	192.09	8095.18	-33.43	180.97	26.45	7.39	419484.58	733953.10	
8194.00	53.50	191.40	8114.15	-57.43	175.99	50.63	8.16	419460.58	733948.12	
8226.00	55.33	192.24	8132.77	-82.90	170.65	76.29	6.10	419435.11	733942.78	
8258.00	57.35	194.34	8150.50	-108.81	164.53	102.42	8.35	419409.20	733936.66	
8289.00	59.41	196.41	8166.76	-134.26	157.52	128.12	8.75	419383.75	733929.65	
8321.00	63.01	198.11	8182.17	-161.04	149.20	155.19	12.17	419356.97	733921.33	
8353.00	66.03	199.02	8195.93	-188.42	140.00	182.90	9.78	419329.59	733912.13	
8384.00	68.67	199.84	8207.87	-215.39	130.48	210.22	8.86	419302.62	733902.61	
8402.34	71.01	199.72	8214.19	-231.59	124.66	226.64	12.77	419286.42	733896.79	Cross Prod. Box
8416.00	72.75	199.63	8218.44	-243.82	120.29	239.02	12.77	419274.19	733892.42	
8448.00	76.95	199.57	8226.80	-272.91	109.93	268.49	13.13	419245.10	733882.06	
8480.00	81.72	199.12	8232.72	-302.57	99.51	298.53	14.97	419215.44	733871.64	
8511.00	86.29	197.04	8235.96	-331.87	89.95	328.17	16.18	419186.14	733862.08	
8543.00	89.37	193.82	8237.17	-362.69	81.45	359.29	13.92	419155.32	733853.58	
8575.00	90.77	190.83	8237.13	-393.95	74.62	390.79	10.32	419124.06	733846.75	
8614.00	91.82	187.43	8236.25	-432.44	68.43	429.49	9.12	419085.57	733840.56	
8646.00	92.94	186.65	8234.92	-464.17	64.51	461.35	4.26	419053.84	733836.64	
8677.00	93.85	186.50	8233.08	-494.91	60.97	492.20	2.97	419023.10	733833.10	
8709.00	94.19	185.93	8230.84	-526.64	57.51	524.05	2.07	418991.37	733829.64	
8741.00	94.68	185.28	8228.37	-558.39	54.40	555.89	2.54	418959.62	733826.53	
8772.00	94.68	184.28	8225.84	-589.18	51.82	586.76	3.22	418928.83	733823.95	
8804.00	94.55	183.13	8223.26	-621.01	49.76	618.64	3.61	418897.00	733821.89	
8836.00	93.92	181.28	8220.90	-652.90	48.53	650.55	6.09	418865.11	733820.66	
8868.00	93.36	179.79	8218.87	-684.83	48.23	682.47	4.97	418833.18	733820.36	
8899.00	93.22	179.20	8217.09	-715.78	48.51	713.39	1.95	418802.23	733820.64	
8931.00	92.24	178.29	8215.56	-747.73	49.21	745.29	4.18	418770.28	733821.34	
8963.00	90.77	177.13	8214.72	-779.70	50.49	777.18	5.85	418738.31	733822.62	
8994.00	89.23	176.66	8214.72	-810.65	52.16	808.05	5.19	418707.36	733824.29	
9026.00	87.41	176.07	8215.66	-842.57	54.19	839.87	5.98	418675.44	733826.32	
9058.00	85.94	176.89	8217.52	-874.45	56.15	871.65	5.26	418643.56	733828.28	
9090.00	84.88	177.38	8220.08	-906.31	57.75	903.43	3.65	418611.70	733829.88	
9121.00	85.73	178.96	8222.62	-937.19	58.73	934.24	5.77	418580.82	733830.86	
9153.00	86.57	181.26	8224.76	-969.12	58.67	966.15	7.64	418548.89	733830.80	
9185.00	86.99	182.02	8226.56	-1001.05	57.76	998.10	2.71	418516.96	733829.89	
9216.00	87.83	182.71	8227.96	-1031.99	56.48	1029.06	3.51	418486.02	733828.61	
9248.00	89.09	182.61	8228.82	-1063.95	55.00	1061.05	3.95	418454.06	733827.13	
9280.00	90.28	183.44	8229.00	-1095.90	53.31	1093.05	4.53	418422.11	733825.44	
9343.00	90.63	184.29	8228.50	-1158.75	49.06	1156.02	1.46	418359.26	733821.19	
9438.00	90.56	184.63	8227.51	-1253.46	41.67	1250.94	0.37	418264.55	733813.80	
9533.00	90.91	184.91	8226.29	-1348.12	33.78	1345.83	0.47	418169.89	733805.91	
9628.00	90.91	184.27	8224.78	-1442.81	26.17	1440.74	0.67	418075.20	733798.30	
9723.00	90.56	184.08	8223.57	-1537.55	19.26	1535.67	0.42	417980.46	733791.39	
9818.00	90.49	184.15	8222.69	-1632.30	12.44	1630.62	0.10	417885.71	733784.57	
9913.00	89.51	184.40	8222.69	-1727.03	5.36	1725.55	1.06	417790.98	733777.49	
10008.00	90.77	185.02	8222.46	-1821.71	-2.44	1820.46	1.48	417696.30	733769.69	
10103.00	90.21	185.76	8221.65	-1916.28	-11.36	1915.31	0.98	417601.73	733760.77	
10199.00	89.72	185.95	8221.71	-2011.78	-21.16	2011.11	0.55	417506.23	733750.97	
10294.00	89.93	186.87	8222.00	-2106.19	-31.76	2105.86	0.99	417411.82	733740.37	
10389.00	89.86	185.66	8222.17	-2200.62	-42.13	2200.61	1.28	417317.39	733730.00	
10484.00	90.56	186.48	8221.83	-2295.08	-52.18	2295.40	1.13	417222.93	733719.95	
10579.00	90.14	185.41	8221.24	-2389.57	-62.01	2390.19	1.21	417128.44	733710.12	
10674.00	89.86	184.85	8221.24	-2484.19	-70.51	2485.06	0.66	417033.82	733701.62	
10769.00	90.42	183.74	8221.01	-2578.92	-77.62	2580.00	1.31	416939.09	733694.51	
10864.00	91.19	183.69	8219.68	-2673.71	-83.78	2674.96	0.81	416844.30	733688.35	
10959.00	89.30	182.45	8219.27	-2768.57	-88.87	2769.94	2.38	416749.44	733683.26	

Survey Points (Relative to Slot centre, TVD relative to Kelly Bushing)										
MD (US ft)	Incl (°)	Az (°)	TVD (US ft)	N. Offset (US ft)	E. Offset (US ft)	VS (US ft)	DLS (°/100 US ft)	No. of ft (US ft)	Last ft (US ft)	Comment
11054.00	89.86	182.93	8219.97	-2863.46	-93.32	2864.93	0.78	416654.55	733678.81	
11149.00	89.86	183.49	8220.20	-2958.31	-98.64	2959.92	0.59	416559.70	733673.49	
11244.00	90.42	183.41	8219.97	-3053.14	-104.36	3054.89	0.60	416464.87	733667.77	
11339.00	91.33	183.79	8218.52	-3147.94	-110.32	3149.85	1.04	416370.07	733661.81	
11434.00	91.68	183.19	8216.02	-3242.73	-116.11	3244.79	0.73	416275.28	733656.02	
11529.00	91.26	182.28	8213.59	-3337.59	-120.64	3339.76	1.05	416180.42	733651.49	
11624.00	89.23	179.99	8213.18	-3432.56	-122.52	3434.73	3.22	416085.45	733649.61	
11719.00	89.93	180.08	8213.88	-3527.55	-122.58	3529.66	0.74	415990.46	733649.55	
11814.00	90.91	180.74	8213.18	-3622.55	-123.26	3624.61	1.24	415895.46	733648.87	
11909.00	90.91	181.15	8211.67	-3717.52	-124.82	3719.57	0.43	415800.49	733647.31	
12004.00	89.93	180.71	8210.97	-3812.50	-126.36	3814.55	1.13	415705.51	733645.77	
12099.00	89.93	179.74	8211.09	-3907.50	-126.74	3909.49	1.02	415610.51	733645.39	
12194.00	88.88	181.12	8212.08	-4002.49	-127.45	4004.43	1.83	415515.52	733644.68	
12290.00	90.28	182.38	8212.78	-4098.44	-130.38	4100.42	1.96	415419.57	733641.75	
12385.00	90.14	182.29	8212.43	-4193.36	-134.25	4195.42	0.18	415324.65	733637.88	
12480.00	91.40	183.71	8211.16	-4288.22	-139.22	4290.40	2.00	415229.79	733632.91	
12575.00	91.68	182.86	8208.60	-4383.03	-144.67	4385.35	0.94	415134.98	733627.46	
12670.00	91.68	183.04	8205.82	-4477.86	-149.55	4480.30	0.19	415040.15	733622.58	
12765.00	92.31	182.96	8202.51	-4572.67	-154.52	4575.23	0.67	414945.34	733617.61	
12860.00	90.91	183.14	8199.84	-4667.50	-159.57	4670.18	1.49	414850.51	733612.56	
12954.00	89.79	181.82	8199.27	-4761.40	-163.64	4764.18	1.84	414756.61	733608.49	Last Wft Svy
13024.00	89.79	181.82	8199.52	-4831.37	-165.86	4834.17	0.00	414686.64	733606.27	Proj. To Bit



Cotton Draw Unit 252H
Lea Co, NM



Plan Data for Cotton Draw Unit 252H

Plan Point Information:

Dogleg Severity Unit: $^{\circ}/100.00\text{ft}$ Position offsets from Slot centre

MD	Inc	Az	TVD	+N/-S	+E/-W	Northing	Easting	VSec	DLS
(USft)	($^{\circ}$)	($^{\circ}$)	(USft)	(USft)	(USft)	(USft)	(USft)	(USft)	(DLSU)
10959.00	89.30	182.45	8219.32	-2768.57	-88.85	416749.44	733683.28	2769.94	2.38
11029.00	89.30	182.45	8220.17	-2838.50	-91.84	416679.51	733680.29	2839.93	0.00
11090.79	90.50	182.70	8220.28	-2899.72	-94.59	416618.29	733677.54	2901.22	2.00
11342.29	90.50	182.70	8218.08	-3151.43	-106.46	416366.58	733665.67	3153.20	0.00
11357.10	90.20	182.70	8217.99	-3166.23	-107.16	416351.78	733664.97	3168.01	2.00
13040.80	90.20	182.70	8212.00	-4848.05	-186.56	414669.96	733585.57	4851.64	0.00

Plan Data for Cotton Draw Unit 252H

Slot: Cotton Draw Unit 252H
Position:
Offset is from Site centre
+N/-S: 0.00USft Northing: 419518.01USft Latitude: $32^{\circ}9'6.5''$
+E/-W: 0.00USft Easting: 733772.13USft Longitude: $-103^{\circ}42'41.5''$
Elevation Above VRD: 3448.00USft

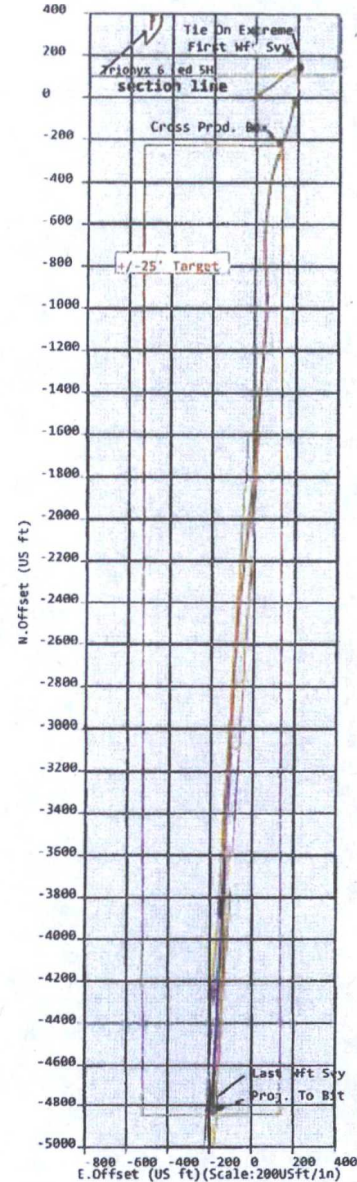
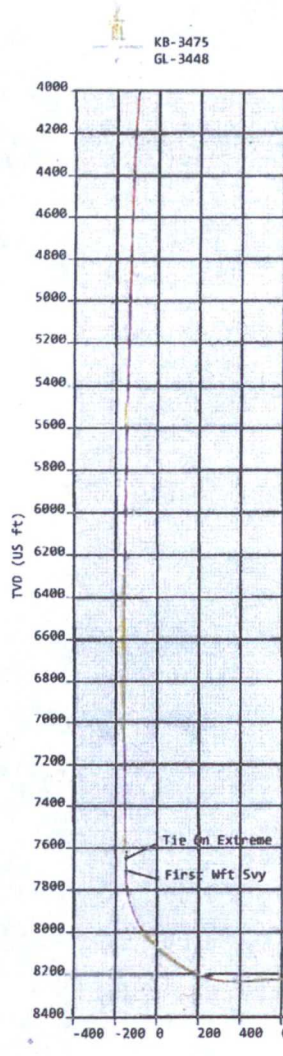
Plan Data for Cotton Draw Unit 252H

Target Set Information:
Name: Cotton Draw Unit 252H
Position offsets from Slot centre
Name TVD +N/-S +E/-W Northing Easting Shape Comment
(USft) (USft) (USft) (USft) (USft)
PBH 252H 8212.00 -4848.05 -186.56 414669.96 733585.57 Cuboid

Plan Data for Cotton Draw Unit 252H

Well: Cotton Draw Unit 252H
Type: Main-Well
File Number:
Plan Folder: P5 Plan: P5-V1
Vertical Section: Position offset of origin from Slot centre:
+N/-S: 0.00USft Azimuth: 182.20°
+E/-W: 0.00USft
Magnetic Parameters:
Model: Field Strength: Declination: Dip: Date:
BGM 48185(nT) 7.34 $^{\circ}$ 68.05 $^{\circ}$ 2015-06-20

Cotton Draw Unit 252H
Trionyx 6 Fed 5H
Cotton Draw Unit 252H



Sign Off: Russell Joyner