



MEAN GREEN 22 FED COM 1H

WEST UNRESTRICTED

Directional Survey

District DELAWARE BASIN	County LEA	Field Name RATTLESNAKE (NM)	Project Group DELAWARE BASIN REG	State/Province NM
Surface Legal Location Sec. 22 T26S R34E	API/UWI 3002541434	Latitude (°) 32° 1' 18.972" N	Longitude (°) 103° 26' 59.738" W	Ground Elev. (ft) 3,213.40
			KB - GL (ft) 25.00	Orig KB Elev (ft) 3,238.40
				Tubing Head Elevation (ft)

Wellbores

Wellbore Name OH	Parent Wellbore OH	SAP Well ID	Kick Off Depth (ftKB)	Vertical Section Direction (°)
Actual Deviation Survey		Definitive?	Proposed?	Proposed Deviation Survey

Deviation Survey

Date	Description
MD Tie In (ftKB)	TVD Tie In (ftKB)
Inclination Tie In (°)	Azimuth Tie In (°)
NSTie In (ft)	EW Tie In (ft)

Survey Data

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
Wellbore Name ST01	Parent Wellbore OH	SAP Well ID	Kick Off Depth (ftKB)	Vertical Section Direction (°)						
Actual Deviation Survey		Definitive?	Proposed?	Proposed Deviation Survey						
WEATHERFORD DIRECTIONAL, Proposed? No		Yes	No							

Deviation Survey

Date	Description
11/10/2014	WEATHERFORD DIRECTIONAL
MD Tie In (ftKB)	TVD Tie In (ftKB)
8,516.00	8,514.98
Inclination Tie In (°)	Azimuth Tie In (°)
0.87	150.96
NSTie In (ft)	EW Tie In (ft)
-19.14	10.44

Survey Data

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
11/11/2...	8,516.00	0.87	150.96	8,514.98	-19.42	-19.14	10.44	0.00	MWD	WEATHERFORD
11/11/2...	8,550.00	0.36	148.02	8,548.98	-19.75	-19.46	10.62	1.50	MWD	WEATHERFORD
11/11/2...	8,613.00	6.17	315.51	8,611.86	-17.43	-17.21	8.35	10.35	MWD	WEATHERFORD
11/11/2...	8,645.00	9.10	309.43	8,643.58	-14.51	-14.37	5.19	9.49	MWD	WEATHERFORD
11/11/2...	8,676.00	12.77	310.31	8,674.01	-10.61	-10.60	0.68	11.85	MWD	WEATHERFORD
11/11/2...	8,708.00	16.23	313.85	8,704.98	-5.06	-5.21	-5.24	11.16	MWD	WEATHERFORD
11/11/2...	8,739.00	18.67	316.68	8,734.56	1.73	1.40	-11.77	8.33	MWD	WEATHERFORD
11/11/2...	8,771.00	20.80	318.70	8,764.68	9.93	9.40	-19.03	6.99	MWD	WEATHERFORD
11/11/2...	8,802.00	22.92	319.60	8,793.44	18.87	18.13	-26.58	6.92	MWD	WEATHERFORD
11/11/2...	8,834.00	25.26	318.45	8,822.66	28.96	27.99	-35.15	7.46	MWD	WEATHERFORD
11/11/2...	8,866.00	27.50	319.27	8,851.32	39.92	38.70	-44.50	7.09	MWD	WEATHERFORD
11/11/2...	8,897.00	29.78	319.35	8,878.53	51.46	49.96	-54.19	7.36	MWD	WEATHERFORD
11/11/2...	8,929.00	32.52	320.34	8,905.91	64.40	62.62	-64.85	8.71	MWD	WEATHERFORD
11/11/2...	8,960.00	35.13	321.57	8,931.66	78.11	76.02	-75.72	8.70	MWD	WEATHERFORD
11/11/2...	8,992.00	37.17	323.55	8,957.50	93.41	91.01	-87.19	7.35	MWD	WEATHERFORD
11/11/2...	9,023.00	39.96	325.20	8,981.74	109.43	106.72	-98.43	9.59	MWD	WEATHERFORD
11/11/2...	9,055.00	42.18	328.36	9,005.86	127.33	124.31	-109.94	9.50	MWD	WEATHERFORD
11/11/2...	9,086.00	44.53	331.89	9,028.41	146.07	142.76	-120.52	10.89	MWD	WEATHERFORD
11/11/2...	9,118.00	46.89	334.52	9,050.75	166.80	163.21	-130.83	9.43	MWD	WEATHERFORD
11/11/2...	9,150.00	48.20	337.01	9,072.35	188.59	184.74	-140.52	7.05	MWD	WEATHERFORD
11/11/2...	9,181.00	48.60	339.09	9,092.94	210.32	206.24	-149.18	5.18	MWD	WEATHERFORD
11/11/2...	9,213.00	50.32	341.14	9,113.74	233.41	229.11	-157.45	7.25	MWD	WEATHERFORD
11/12/2...	9,244.00	52.92	342.88	9,132.98	256.72	252.22	-164.95	9.47	MWD	WEATHERFORD
11/12/2...	9,276.00	55.43	344.08	9,151.71	281.79	277.09	-172.32	8.41	MWD	WEATHERFORD
11/12/2...	9,307.00	58.68	345.85	9,168.57	307.09	302.21	-179.06	11.53	MWD	WEATHERFORD
11/12/2...	9,339.00	61.83	347.81	9,184.45	334.31	329.26	-185.38	11.19	MWD	WEATHERFORD
11/12/2...	9,370.00	65.48	349.20	9,198.20	361.67	356.48	-190.91	12.44	MWD	WEATHERFORD
11/12/2...	9,402.00	69.22	350.02	9,210.52	390.85	385.52	-196.23	11.92	MWD	WEATHERFORD
11/12/2...	9,424.00	71.64	351.35	9,217.89	411.39	405.98	-199.59	12.39	MWD	WEATHERFORD
11/13/2...	9,455.00	74.13	352.45	9,227.01	440.82	435.31	-203.76	8.72	MWD	WEATHERFORD
11/13/2...	9,487.00	75.44	352.29	9,235.41	471.53	465.91	-207.86	4.12	MWD	WEATHERFORD
11/13/2...	9,518.00	76.72	351.19	9,242.87	501.42	495.69	-212.18	5.38	MWD	WEATHERFORD
11/13/2...	9,550.00	78.31	350.59	9,249.79	532.39	526.53	-217.13	5.30	MWD	WEATHERFORD
11/13/2...	9,582.00	79.94	350.31	9,255.82	563.51	557.52	-222.34	5.17	MWD	WEATHERFORD
11/13/2...	9,613.00	82.07	349.70	9,260.67	593.80	587.68	-227.66	7.14	MWD	WEATHERFORD
11/13/2...	9,645.00	82.99	350.85	9,264.83	625.21	618.95	-233.02	4.58	MWD	WEATHERFORD

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Survey Data

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11/14/2...	9,676.00	84.40	351.84	9,268.23	655.79	649.41	-237.65	5.55	MWD	WEATHERFORD
11/14/2...	9,708.00	86.08	353.81	9,270.89	687.52	681.04	-241.63	8.07	MWD	WEATHERFORD
11/14/2...	9,739.00	88.11	355.04	9,272.46	718.41	711.86	-244.64	7.65	MWD	WEATHERFORD
11/15/2...	9,771.00	89.02	356.22	9,273.26	750.36	743.75	-247.08	4.66	MWD	WEATHERFORD
11/15/2...	9,865.00	89.58	357.88	9,274.41	844.32	837.62	-251.92	1.86	MWD	WEATHERFORD
11/15/2...	9,960.00	89.30	358.06	9,275.34	939.32	932.55	-255.28	0.35	MWD	WEATHERFORD
11/16/2...	10,054.00	90.56	359.53	9,275.45	1,033.31	1,026.53	-257.26	2.06	MWD	WEATHERFORD
11/16/2...	10,149.00	91.26	359.54	9,273.95	1,128.28	1,121.51	-258.03	0.74	MWD	WEATHERFORD
11/16/2...	10,244.00	91.89	1.60	9,271.33	1,223.17	1,216.47	-257.08	2.27	MWD	WEATHERFORD
11/16/2...	10,338.00	92.38	1.36	9,267.83	1,316.97	1,310.37	-254.66	0.58	MWD	WEATHERFORD
11/16/2...	10,433.00	92.52	1.74	9,263.77	1,411.74	1,405.25	-252.09	0.43	MWD	WEATHERFORD
11/16/2...	10,527.00	92.66	2.34	9,259.52	1,505.45	1,499.09	-248.75	0.65	MWD	WEATHERFORD
11/16/2...	10,622.00	92.03	1.89	9,255.64	1,600.17	1,593.95	-245.24	0.81	MWD	WEATHERFORD
11/16/2...	10,716.00	90.21	1.70	9,253.80	1,693.98	1,687.88	-242.30	1.95	MWD	WEATHERFORD
11/16/2...	10,811.00	89.72	1.30	9,253.86	1,788.84	1,782.84	-239.81	0.67	MWD	WEATHERFORD
11/16/2...	10,905.00	89.79	1.76	9,254.26	1,882.70	1,876.81	-237.30	0.49	MWD	WEATHERFORD
11/16/2...	11,000.00	90.00	2.13	9,254.43	1,977.52	1,971.75	-234.08	0.45	MWD	WEATHERFORD
11/16/2...	11,095.00	89.72	1.62	9,254.67	2,072.35	2,066.70	-230.97	0.61	MWD	WEATHERFORD
11/16/2...	11,189.00	89.79	1.97	9,255.07	2,166.18	2,160.66	-228.03	0.38	MWD	WEATHERFORD
11/16/2...	11,284.00	89.51	1.01	9,255.65	2,261.04	2,255.62	-225.56	1.05	MWD	WEATHERFORD
11/16/2...	11,378.00	89.23	0.24	9,256.68	2,354.96	2,349.61	-224.53	0.87	MWD	WEATHERFORD
11/16/2...	11,475.00	89.09	359.58	9,258.10	2,451.92	2,446.60	-224.68	0.70	MWD	WEATHERFORD
11/18/2...	11,570.00	89.30	359.37	9,259.44	2,546.89	2,541.58	-225.55	0.31	MWD	WEATHERFORD
11/18/2...	11,665.00	90.49	0.06	9,259.61	2,641.86	2,636.58	-226.03	1.45	MWD	WEATHERFORD
11/18/2...	11,760.00	90.49	0.19	9,258.80	2,736.82	2,731.58	-225.82	0.14	MWD	WEATHERFORD
11/18/2...	11,854.00	90.14	0.32	9,258.28	2,830.77	2,825.57	-225.40	0.40	MWD	WEATHERFORD
11/18/2...	11,949.00	90.35	359.94	9,257.88	2,925.72	2,920.57	-225.19	0.46	MWD	WEATHERFORD
11/18/2...	12,043.00	91.40	0.00	9,256.44	3,019.67	3,014.56	-225.24	1.12	MWD	WEATHERFORD
11/18/2...	12,138.00	91.05	359.52	9,254.41	3,114.62	3,109.54	-225.63	0.63	MWD	WEATHERFORD
11/18/2...	12,232.00	90.91	0.20	9,252.80	3,208.58	3,203.52	-225.86	0.74	MWD	WEATHERFORD
11/18/2...	12,327.00	90.35	0.41	9,251.76	3,303.52	3,298.52	-225.36	0.63	MWD	WEATHERFORD
11/18/2...	12,422.00	89.93	0.20	9,251.53	3,398.47	3,393.51	-224.85	0.49	MWD	WEATHERFORD
11/18/2...	12,516.00	90.14	0.87	9,251.47	3,492.40	3,487.51	-223.97	0.75	MWD	WEATHERFORD
11/18/2...	12,611.00	90.49	0.28	9,250.95	3,587.33	3,582.50	-223.02	0.72	MWD	WEATHERFORD
11/18/2...	12,706.00	90.91	0.50	9,249.79	3,682.27	3,677.49	-222.37	0.50	MWD	WEATHERFORD
11/18/2...	12,800.00	90.00	0.01	9,249.04	3,776.21	3,771.49	-221.96	1.10	MWD	WEATHERFORD
11/18/2...	12,894.00	90.84	359.67	9,248.35	3,870.18	3,865.48	-222.22	0.96	MWD	WEATHERFORD
11/18/2...	12,989.00	92.10	0.31	9,245.91	3,965.11	3,960.45	-222.23	1.49	MWD	WEATHERFORD
11/18/2...	13,084.00	92.03	359.74	9,242.49	4,060.01	4,055.39	-222.19	0.60	MWD	WEATHERFORD
11/18/2...	13,178.00	92.03	359.64	9,239.16	4,153.93	4,149.33	-222.70	0.11	MWD	WEATHERFORD
11/18/2...	13,273.00	92.17	359.24	9,235.68	4,248.85	4,244.26	-223.63	0.45	MWD	WEATHERFORD
11/18/2...	13,365.00	91.40	0.43	9,232.81	4,340.77	4,336.21	-223.89	1.54	MWD	WEATHERFORD
11/18/2...	13,460.00	91.75	0.37	9,230.20	4,435.68	4,431.17	-223.23	0.37	MWD	WEATHERFORD
11/18/2...	13,555.00	91.89	0.57	9,227.18	4,530.57	4,526.12	-222.45	0.26	MWD	WEATHERFORD
11/18/2...	13,649.00	91.33	0.76	9,224.54	4,624.46	4,620.08	-221.36	0.63	MWD	WEATHERFORD
11/18/2...	13,710.00	91.19	0.74	9,223.20	4,685.39	4,681.06	-220.56	0.23	MWD	WEATHERFORD
11/18/2...	13,751.00	91.42	0.77	9,222.27	4,726.35	4,722.04	-220.02	0.57	MWD	WEATHERFORD
11/18/2...	13,846.00	89.26	1.14	9,221.71	4,821.24	4,817.02	-218.44	2.31	MWD	WEATHERFORD
11/18/2...	13,940.00	89.29	0.92	9,222.89	4,915.14	4,911.00	-216.75	0.24	MWD	WEATHERFORD
11/18/2...	14,034.00	90.28	1.19	9,223.25	5,009.03	5,004.98	-215.02	1.09	MWD	WEATHERFORD
11/18/2...	14,128.00	90.14	1.33	9,222.90	5,102.92	5,098.96	-212.95	0.21	MWD	WEATHERFORD
11/18/2...	14,223.00	88.88	359.44	9,223.72	5,197.85	5,193.95	-212.31	2.39	MWD	WEATHERFORD
11/18/2...	14,317.00	88.74	359.55	9,225.67	5,291.81	5,287.92	-213.14	0.19	MWD	WEATHERFORD
11/18/2...	14,412.00	88.74	359.64	9,227.76	5,386.77	5,382.90	-213.81	0.09	MWD	WEATHERFORD
11/18/2...	14,506.00	88.60	359.79	9,229.94	5,480.72	5,476.87	-214.28	0.22	MWD	WEATHERFORD



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				Tubing Head Elevation (ft)

Survey Data

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12/6/2014	14,601.00	88.39	359.80	9,232.43	5,575.66	5,571.84	-214.62	0.22	MWD	WEATHERFORD
12/6/2014	14,695.00	88.39	359.90	9,235.07	5,669.59	5,665.80	-214.87	0.11	MWD	WEATHERFORD
12/6/2014	14,790.00	88.18	359.84	9,237.92	5,764.52	5,760.76	-215.08	0.23	MWD	WEATHERFORD
12/6/2014	14,884.00	88.39	0.16	9,240.73	5,858.44	5,854.72	-215.08	0.41	MWD	WEATHERFORD
12/6/2014	14,979.00	90.28	359.92	9,241.83	5,953.39	5,949.70	-215.02	2.01	MWD	WEATHERFORD
12/6/2014	15,074.00	91.12	0.13	9,240.67	6,048.34	6,044.70	-214.97	0.91	MWD	WEATHERFORD
12/6/2014	15,168.00	91.19	0.24	9,238.78	6,142.28	6,138.68	-214.67	0.14	MWD	WEATHERFORD
12/6/2014	15,263.00	90.98	0.59	9,236.98	6,237.20	6,233.66	-213.98	0.43	MWD	WEATHERFORD
12/6/2014	15,358.00	90.28	0.51	9,235.93	6,332.13	6,328.65	-213.07	0.74	MWD	WEATHERFORD
12/6/2014	15,452.00	90.28	0.50	9,235.48	6,426.06	6,422.64	-212.24	0.01	MWD	WEATHERFORD
12/6/2014	15,547.00	90.14	0.71	9,235.13	6,520.99	6,517.64	-211.24	0.27	MWD	WEATHERFORD
12/6/2014	15,642.00	89.79	0.43	9,235.18	6,615.92	6,612.63	-210.29	0.47	MWD	WEATHERFORD
12/6/2014	15,736.00	89.79	0.32	9,235.53	6,709.87	6,706.63	-209.68	0.12	MWD	WEATHERFORD
12/6/2014	15,831.00	89.23	0.30	9,236.34	6,804.81	6,801.62	-209.17	0.59	MWD	WEATHERFORD
12/7/2014	15,926.00	89.37	0.24	9,237.50	6,899.75	6,896.62	-208.72	0.16	MWD	WEATHERFORD
12/7/2014	16,020.00	90.63	0.70	9,237.50	6,993.69	6,990.61	-207.95	1.43	MWD	WEATHERFORD
12/7/2014	16,115.00	90.63	0.84	9,236.46	7,088.60	7,085.60	-206.67	0.15	MWD	WEATHERFORD
12/7/2014	16,209.00	90.77	0.87	9,235.31	7,182.51	7,179.58	-205.27	0.15	MWD	WEATHERFORD
12/8/2014	16,304.00	90.63	0.95	9,234.15	7,277.41	7,274.56	-203.76	0.17	MWD	WEATHERFORD
12/8/2014	16,399.00	90.42	0.99	9,233.28	7,372.31	7,369.54	-202.15	0.23	MWD	WEATHERFORD
12/8/2014	16,463.00	90.28	1.12	9,232.89	7,436.24	7,433.53	-200.97	0.30	MWD	WEATHERFORD
12/8/2014	16,532.00	90.28	1.12	9,232.55	7,505.16	7,502.52	-199.62	0.00	BIT	WEATHERFORD