

Well Name: PENS2JHS

API 4708510074	Surface Legal Location	Field PENS	Permit Number	State West Virginia	Well Configuration Type HORIZONTAL
Ground Elevation (ft) 1,084.00	Casing Flange Elevation (ft) 1,083.25	KB-Ground Distance (ft) 25.50	KB-Casing Flange Distance (ft) 26.25	Spud Date (Conductor) 1/13/2014 17:30	Rig Release Date 5/24/2014 18:00

Wellbore Name Original Hole	Parent Wellbore	Vertical Section Direction (°) 305.91
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Kick Offs & Key Depths							
Date	Point or Interval	Type	Top Depth (ftKB)	Depth Top (TVD) (ftKB)	Bottom Depth (ftKB)	Depth Bottom (TVD) (ftKB)	Length (ft)
5/8/2014		Kick Off					

Deviation Surveys							
Date	Definitive?	Description	Proposed?				
1/14/2014	No	ORIGINAL	No				
MD Tie In (ftKB)	TVD Tie In (ftKB)	Inclination Tie In (°)	Azimuth Tie In (°)	NSTie In (ft)	EWTie In (ft)		

Survey Data													
Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Build (°/100ft)	Turn (°/100ft)	Unwrap Displace (ft)	Method	Survey Company
1/14/2014	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	INCL	
1/14/2014	100.00	0.28	149.77	100.00	-0.22	-0.21	0.12	0.28	0.28	149.77	0.24	INCL	
1/14/2014	200.00	0.99	229.93	199.99	-0.24	-0.98	-0.42	0.98	0.71	80.16	1.18	INCL	
1/14/2014	300.00	1.26	228.28	299.97	0.21	-2.27	-1.90	0.27	0.27	-1.65	3.14	INCL	
1/14/2014	400.00	1.26	239.80	399.95	0.89	-3.55	-3.67	0.25	0.00	11.52	5.33	INCL	
1/14/2014	500.00	1.21	239.71	499.93	1.76	-4.64	-5.53	0.05	-0.05	-0.09	7.49	INCL	
1/14/2014	528.00	1.01	242.34	527.92	1.99	-4.90	-6.00	0.74	-0.71	9.39	8.03	INCL	
1/14/2014	600.00	0.88	235.63	599.91	2.46	-5.51	-7.02	0.24	-0.18	-9.32	9.22	INCL	
1/14/2014	625.00	0.86	237.52	624.91	2.59	-5.72	-7.34	0.14	-0.08	7.56	9.60	INCL	
1/14/2014	716.00	1.23	248.04	715.89	3.36	-6.45	-8.82	0.46	0.41	11.56	11.25	INCL	
1/14/2014	812.00	2.47	279.51	811.84	5.76	-6.49	-11.82	1.62	1.29	32.78	14.24	INCL	
1/14/2014	907.00	3.06	282.30	906.73	9.92	-5.61	-16.31	0.64	0.62	2.94	18.83	INCL	
1/14/2014	1,003.00	4.54	282.18	1,002.52	15.75	-4.27	-22.53	1.54	1.54	-0.13	25.19	INCL	
1/14/2014	1,099.00	5.90	283.18	1,098.12	23.78	-2.34	-31.05	1.42	1.42	1.04	33.92	INCL	
1/14/2014	1,195.00	6.22	279.60	1,193.58	32.99	-0.35	-40.98	0.52	0.33	-3.73	44.05	INCL	
1/14/2014	1,291.00	5.28	273.14	1,289.10	41.36	0.76	-50.52	1.19	-0.98	-6.73	53.65	INCL	
1/14/2014	1,386.00	4.28	264.70	1,383.77	47.71	0.67	-58.41	1.28	-1.05	-8.88	61.55	INCL	
1/14/2014	1,481.00	2.72	253.81	1,478.59	51.76	-0.28	-64.11	1.78	-1.64	-11.46	67.32	INCL	
1/14/2014	1,577.00	1.36	264.15	1,574.53	54.01	-1.03	-67.43	1.46	-1.42	10.77	70.73	INCL	
1/14/2014	1,672.00	1.26	269.20	1,669.50	55.69	-1.16	-69.60	0.16	-0.11	5.32	72.90	INCL	
1/14/2014	1,768.00	0.66	262.00	1,765.49	56.93	-1.25	-71.20	0.64	-0.63	-7.50	74.50	INCL	
1/14/2014	1,862.00	0.89	86.97	1,859.49	56.75	-1.29	-71.01	1.65	0.24	-186.20	74.70	INCL	
1/14/2014	1,958.00	1.11	84.22	1,955.47	55.48	-1.16	-69.34	0.23	0.23	-2.86	76.38	INCL	
1/14/2014	2,053.00	1.15	68.08	2,050.45	54.28	-0.71	-67.54	0.34	0.04	-16.99	78.23	INCL	
1/14/2014	2,149.00	1.48	52.67	2,146.43	53.41	0.40	-65.66	0.50	0.34	-16.05	80.41	INCL	
1/14/2014	2,245.00	0.78	30.80	2,242.41	53.11	1.72	-64.34	0.84	-0.73	-22.78	82.28	INCL	
1/14/2014	2,340.00	0.88	280.92	2,337.40	53.83	2.41	-64.72	1.43	0.11	263.28	83.07	INCL	
1/14/2014	2,435.00	1.73	272.83	2,432.38	55.70	2.62	-66.87	0.91	0.89	-8.52	85.23	INCL	
1/14/2014	2,530.00	0.80	270.28	2,527.35	57.44	2.69	-68.97	0.98	-0.98	-2.68	87.32	INCL	
1/14/2014	2,625.00	0.65	259.05	2,622.35	58.34	2.59	-70.16	0.22	-0.16	-11.82	88.52	INCL	
1/14/2014	2,720.00	1.98	229.09	2,717.32	59.09	1.42	-71.93	1.53	1.40	-31.54	90.65	INCL	
1/14/2014	2,816.00	4.58	234.40	2,813.15	60.68	-1.90	-76.30	2.72	2.71	5.53	96.13	INCL	
1/14/2014	2,911.00	6.65	232.35	2,907.69	63.44	-7.47	-83.74	2.19	2.18	-2.16	105.43	INCL	
1/14/2014	3,007.00	7.85	227.94	3,002.93	66.38	-15.26	-93.01	1.38	1.25	-4.59	117.53	INCL	
1/14/2014	3,103.00	9.11	227.43	3,097.87	69.26	-24.79	-103.47	1.31	1.31	-0.53	131.69	INCL	
1/14/2014	3,198.00	10.64	228.40	3,191.46	72.66	-35.70	-115.57	1.62	1.61	1.02	147.98	INCL	
1/14/2014	3,293.00	14.16	227.20	3,284.23	76.84	-49.42	-130.66	3.71	3.71	-1.26	168.38	INCL	
1/14/2014	3,388.00	14.37	227.53	3,376.30	81.48	-65.28	-147.88	0.24	0.22	0.35	191.78	INCL	
1/14/2014	3,484.00	14.92	228.53	3,469.18	86.58	-81.51	-165.93	0.63	0.57	1.04	216.06	INCL	
1/14/2014	3,576.00	16.94	230.21	3,557.65	92.48	-97.93	-185.10	2.25	2.20	1.83	241.30	INCL	
1/14/2014	3,671.00	18.66	226.15	3,648.10	98.60	-117.32	-206.70	2.23	1.81	-4.27	270.32	INCL	
1/14/2014	3,767.00	20.94	223.20	3,738.42	103.51	-140.47	-229.52	2.59	2.38	-3.07	302.83	INCL	
1/14/2014	3,863.00	23.52	226.35	3,827.28	109.16	-166.20	-255.13	2.96	2.69	3.28	339.14	INCL	
1/14/2014	3,958.00	26.56	227.21	3,913.34	116.76	-193.72	-284.44	3.22	3.20	0.91	379.34	INCL	
1/14/2014	4,053.00	27.06	231.94	3,998.14	126.88	-221.47	-317.04	2.31	0.53	4.98	422.16	INCL	
1/14/2014	4,148.00	28.06	229.48	4,082.36	138.09	-249.31	-351.05	1.59	1.05	-2.59	466.10	INCL	
1/14/2014	4,244.00	30.76	227.71	4,165.98	148.41	-280.51	-386.38	2.95	2.81	-1.84	513.23	INCL	

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Survey Data														
Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Build (°/100ft)	Turn (°/100ft)	Unwrap Displace (ft)	Method	Survey Company	
1/14/2014	4,339.00	33.09	227.78	4,246.61	158.72	-314.28	-423.56	2.45	2.45	0.07	563.47	INCL		
1/14/2014	4,435.00	34.76	227.66	4,326.26	169.68	-350.33	-463.20	1.74	1.74	-0.13	617.04	INCL		
1/14/2014	4,530.00	36.25	226.27	4,403.60	180.25	-387.99	-503.51	1.78	1.57	-1.46	672.21	INCL		
1/14/2014	4,625.00	35.69	225.05	4,480.49	189.70	-426.98	-543.42	0.96	-0.59	-1.28	728.01	INCL		
1/14/2014	4,721.00	36.68	226.98	4,557.97	199.65	-466.33	-584.21	1.57	1.03	2.01	784.68	INCL		
1/14/2014	4,816.00	39.47	226.94	4,632.75	210.88	-506.31	-627.02	2.94	2.94	-0.04	843.26	INCL		
1/14/2014	4,912.00	39.26	226.61	4,706.97	222.35	-548.01	-671.39	0.31	-0.22	-0.34	904.15	INCL		
1/14/2014	5,007.00	36.18	226.03	4,782.10	232.86	-588.14	-713.42	3.26	-3.24	-0.61	962.26	INCL		
1/14/2014	5,103.00	36.95	226.04	4,859.21	242.92	-627.84	-754.59	0.80	0.80	0.01	1,019.45	INCL		
1/14/2014	5,199.00	37.32	226.06	4,935.74	253.12	-668.06	-796.31	0.39	0.39	0.02	1,077.41	INCL		
1/14/2014	5,294.00	37.70	227.08	5,011.10	263.82	-707.83	-838.32	0.77	0.40	1.07	1,135.25	INCL		
1/14/2014	5,389.00	36.20	227.41	5,087.02	275.04	-746.60	-880.25	1.59	-1.58	0.35	1,192.35	INCL		
1/14/2014	5,485.00	35.81	229.26	5,164.68	287.18	-784.11	-922.40	1.20	-0.41	1.93	1,248.78	INCL		
1/14/2014	5,580.00	36.95	227.73	5,241.17	299.44	-821.46	-964.59	1.53	1.20	-1.61	1,305.13	INCL		
1/14/2014	5,675.00	35.77	225.76	5,317.67	310.04	-860.04	-	1.75	-1.24	-2.07	1,361.44	INCL		
							1,005.61							
5/17/2014	5,747.00	34.77	226.38	5,376.46	317.37	-888.88	-	1.48	-1.39	0.86	1,403.01	INCL		
							1,035.55							
5/17/2014	5,845.00	32.14	227.28	5,458.21	327.59	-925.85	-	2.73	-2.68	0.92	1,457.03	INCL		
							1,074.94							
5/17/2014	5,893.00	34.21	225.33	5,498.39	332.31	-944.00	-	4.85	4.31	-4.06	1,483.29	INCL		
							1,093.92							
5/17/2014	5,989.00	38.78	224.58	5,575.54	341.27	-984.41	-	4.78	4.76	-0.78	1,540.37	INCL		
							1,134.23							
5/17/2014	6,084.00	37.44	221.85	5,650.29	348.74	-	-	2.27	-1.41	-2.87	1,598.99	INCL		
							1,027.11							
5/17/2014	6,180.00	36.11	219.94	5,727.19	353.75	-	-	1.83	-1.39	-1.99	1,656.46	INCL		
							1,070.54							
5/17/2014	6,227.00	35.84	218.63	5,765.23	355.37	-	-	1.74	-0.57	-2.79	1,684.07	INCL		
							1,091.91							
5/17/2014	6,274.00	37.00	226.46	5,803.07	358.62	-	-	10.19	2.47	16.66	1,711.92	INCL		
							1,112.41							
5/17/2014	6,321.00	38.89	234.00	5,840.15	365.79	-	-	10.65	4.02	16.04	1,740.77	INCL		
							1,130.84							
5/17/2014	6,370.00	40.09	241.54	5,877.99	377.40	-	-	10.08	2.45	15.39	1,771.88	INCL		
							1,147.41							
5/17/2014	6,417.00	40.62	248.75	5,913.82	392.25	-	-	9.99	1.13	15.34	1,802.27	INCL		
							1,160.17							
5/17/2014	6,466.00	40.83	257.18	5,950.99	411.48	-	-	11.23	0.43	17.20	1,834.18	INCL		
							1,169.52							
5/17/2014	6,513.00	42.52	262.68	5,986.10	433.19	-	-	8.57	3.60	11.70	1,865.40	INCL		
							1,174.95							
5/17/2014	6,561.00	45.19	268.64	6,020.73	458.58	-	-	10.24	5.56	12.42	1,898.63	INCL		
							1,177.42							
5/17/2014	6,608.00	48.13	274.35	6,052.99	486.77	-	-	10.82	6.26	12.15	1,932.78	INCL		
							1,176.49							
5/17/2014	6,657.00	51.00	278.71	6,084.78	519.27	-	-	8.95	5.86	8.90	1,970.05	INCL		
							1,172.22							
5/17/2014	6,704.00	54.68	282.99	6,113.17	553.20	-	-	10.67	7.83	9.11	2,007.49	INCL		
							1,165.14							
5/17/2014	6,752.00	58.58	287.03	6,139.58	590.64	-	-	10.74	8.13	8.42	2,047.55	INCL		
							1,154.74							
5/17/2014	6,799.00	62.24	291.84	6,162.79	629.81	-	-	11.82	7.79	10.23	2,088.40	INCL		
							1,141.12							
5/17/2014	6,847.00	65.72	295.50	6,183.85	671.96	-	-	9.97	7.25	7.63	2,131.52	INCL		
							1,123.79							
5/17/2014	6,894.00	68.08	300.40	6,202.30	714.75	-	-	10.82	5.02	10.43	2,174.73	INCL		
							1,103.52							
5/18/2014	6,943.00	70.61	304.05	6,219.59	760.50	-	-	8.67	5.16	7.45	2,220.57	INCL		
							1,079.07							

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5/18/2014	6,990.00	72.92	307.96	6,234.30	805.12	-	-	9.30	4.91	8.32	2,265.19	INCL	
5/18/2014	7,038.00	76.95	311.70	6,246.78	851.34	1,052.82	1,756.49	-	-	-	-	INCL	
5/18/2014	7,085.00	80.74	313.76	6,255.87	897.12	1,023.14	1,792.06	11.27	8.40	7.79	2,311.52	INCL	
5/18/2014	7,134.00	83.10	315.79	6,262.76	945.05	-991.85	-	9.14	8.06	4.38	2,357.62	INCL	
5/18/2014	7,181.00	86.76	317.76	6,266.91	991.01	-957.69	-	-	-	-	-	INCL	
5/18/2014	7,229.00	88.62	319.21	6,268.84	1,037.82	-887.67	-	6.33	4.82	4.14	2,406.13	INCL	
5/18/2014	7,287.00	92.03	322.49	6,268.52	1,093.84	-923.58	-	8.84	7.79	4.19	2,452.94	INCL	
5/19/2014	7,324.00	93.16	323.63	6,266.84	1,129.16	-842.70	-	4.91	3.88	3.02	2,500.90	INCL	
5/19/2014	7,419.00	92.78	323.13	6,261.92	1,219.66	-813.16	-	8.16	5.88	5.66	2,558.88	INCL	
5/19/2014	7,515.00	91.07	324.19	6,258.69	1,311.03	-737.02	-	4.34	3.05	3.08	2,595.84	INCL	
5/19/2014	7,610.00	90.48	322.83	6,257.41	1,401.57	-2,039.61	-	0.66	-0.40	-0.53	2,690.71	INCL	
5/19/2014	7,706.00	89.83	321.02	6,257.15	1,493.84	-2,096.46	-	2.10	-1.78	1.10	2,786.65	INCL	
5/19/2014	7,801.00	89.38	318.04	6,257.80	1,586.16	-583.37	-	1.56	-0.62	-1.43	2,881.64	INCL	
5/19/2014	7,897.00	89.24	316.40	6,258.96	1,680.29	-507.80	-	2.00	-0.68	-1.89	2,977.64	INCL	
5/19/2014	7,993.00	89.14	315.85	6,260.32	1,774.75	-2,212.15	-	3.17	-0.47	-3.14	3,072.62	INCL	
5/19/2014	8,088.00	89.00	316.41	6,261.86	1,868.23	-435.54	-	1.71	-0.15	-1.71	3,168.61	INCL	
5/19/2014	8,184.00	89.86	318.95	6,262.81	1,962.20	-2,338.99	-	0.58	-0.10	-0.57	3,264.60	INCL	
5/19/2014	8,279.00	90.45	320.92	6,262.56	2,054.37	-227.41	-	0.61	-0.15	0.59	3,359.59	INCL	
5/19/2014	8,375.00	90.58	322.06	6,261.69	2,146.83	-156.44	-	2.79	0.90	2.65	3,455.58	INCL	
5/19/2014	8,471.00	90.89	322.85	6,260.46	2,238.85	2,535.97	-	2.16	0.62	2.07	3,550.57	INCL	
5/19/2014	8,566.00	90.55	322.93	6,259.27	2,329.70	-83.74	-	1.20	0.14	1.19	3,646.56	INCL	
5/19/2014	8,662.00	90.48	321.22	6,258.41	2,421.90	2,656.89	-	0.88	0.32	0.82	3,742.56	INCL	
5/20/2014	8,758.00	89.38	318.66	6,258.52	2,515.03	67.48	-	0.37	-0.36	0.08	3,837.55	INCL	
5/20/2014	8,853.00	90.48	319.50	6,258.64	2,607.53	143.24	-	1.78	-0.07	-1.78	3,933.54	INCL	
5/20/2014	8,949.00	91.10	319.58	6,257.32	2,700.82	218.96	-	2.90	-1.15	-2.67	4,029.53	INCL	
5/20/2014	9,045.00	91.27	320.37	6,255.33	2,793.92	282.43	-	1.46	1.16	0.88	4,124.53	INCL	
5/20/2014	9,140.00	90.52	319.77	6,253.85	2,886.02	364.21	-	0.65	0.65	0.08	4,220.52	INCL	
5/20/2014	9,236.00	90.07	319.67	6,253.35	2,979.24	437.25	-	0.84	0.18	0.82	4,316.50	INCL	
5/20/2014	9,332.00	90.07	320.11	6,253.23	3,072.40	510.74	-	1.01	-0.79	-0.63	4,411.49	INCL	
5/20/2014	9,427.00	90.48	319.92	6,252.78	3,164.53	583.58	-	0.48	-0.47	-0.10	4,507.48	INCL	
5/20/2014						656.82	-	0.46	0.00	0.46	4,603.48	INCL	
5/20/2014						730.24	-	0.48	0.43	-0.20	4,698.48	INCL	
5/20/2014						803.03	-						
5/20/2014							3,264.60						
5/20/2014							3,325.64						

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Well Name: PENS2JHS

API 4708510074	Surface Legal Location	Field PENS	Permit Number	State West Virginia	Well Configuration Type HORIZONTAL
Ground Elevation (ft) 1,084.00	Casing Flange Elevation (ft) 1,083.25	KB-Ground Distance (ft) 25.50	KB-Casing Flange Distance (ft) 26.25	Spud Date (Conductor) 1/13/2014 17:30	Rig Release Date 5/24/2014 18:00

Survey Data

Date	MD (ft)	Incl (°)	Azm (°)	TVD (ft)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Build (°/100ft)	Turn (°/100ft)	Unwrap Displace (ft)	Method	Survey Company
5/20/2014	9,522.00	90.21	319.57	6,252.21	3,256.78	875.53	-3,387.03	0.47	-0.28	-0.37	4,793.48	INCL	
5/20/2014	9,617.00	89.97	319.31	6,252.06	3,349.14	947.70	-3,448.80	0.37	-0.25	-0.27	4,888.48	INCL	
5/20/2014	9,712.00	89.93	319.48	6,252.14	3,441.52	1,019.83	-3,510.63	0.18	-0.04	0.18	4,983.48	INCL	
5/20/2014	9,808.00	89.86	317.54	6,252.32	3,535.20	1,091.74	-3,574.23	2.02	-0.07	-2.02	5,079.48	INCL	
5/20/2014	9,903.00	90.07	319.94	6,252.37	3,627.83	1,163.14	-3,636.87	2.54	0.22	2.53	5,174.47	INCL	
5/20/2014	9,998.00	90.07	320.21	6,252.26	3,719.94	1,236.00	-3,697.84	0.28	0.00	0.28	5,269.47	INCL	
5/20/2014	10,093.00	90.10	319.90	6,252.12	3,812.06	1,308.83	-3,758.84	0.33	0.03	-0.33	5,364.47	INCL	
5/20/2014	10,187.00	89.97	319.60	6,252.06	3,903.33	1,380.57	-3,819.57	0.35	-0.14	-0.32	5,458.47	INCL	
5/20/2014	10,282.00	90.07	319.65	6,252.03	3,995.62	1,452.95	-3,881.11	0.12	0.11	0.05	5,553.47	INCL	
5/20/2014	10,378.00	90.03	319.36	6,251.94	4,088.93	1,525.95	-3,943.45	0.30	-0.04	-0.30	5,649.47	INCL	
5/20/2014	10,473.00	90.10	319.27	6,251.84	4,181.34	1,597.99	-4,005.38	0.12	0.07	-0.09	5,744.47	INCL	
5/20/2014	10,568.00	90.00	319.53	6,251.75	4,273.72	1,670.12	-4,067.21	0.29	-0.11	0.27	5,839.47	INCL	
5/20/2014	10,662.00	90.27	319.13	6,251.53	4,365.16	1,741.42	-4,128.47	0.51	0.29	-0.43	5,933.47	INCL	
5/20/2014	10,757.00	90.10	319.13	6,251.22	4,457.64	1,813.26	-4,190.63	0.18	-0.18	0.00	6,028.47	INCL	
5/20/2014	10,852.00	90.03	318.82	6,251.12	4,550.18	1,884.93	-4,252.99	0.33	-0.07	-0.33	6,123.47	INCL	
5/20/2014	10,947.00	90.03	319.03	6,251.07	4,642.74	1,956.54	-4,315.41	0.22	0.00	0.22	6,218.47	INCL	
5/20/2014	11,041.00	89.93	320.10	6,251.10	4,734.08	2,028.09	-4,376.37	1.14	-0.11	1.14	6,312.46	INCL	
5/20/2014	11,137.00	90.03	320.93	6,251.13	4,826.98	2,102.18	-4,437.42	0.87	0.10	0.86	6,408.46	INCL	
5/20/2014	11,232.00	90.00	320.98	6,251.11	4,918.72	2,175.96	-4,497.26	0.06	-0.03	0.05	6,503.46	INCL	
5/21/2014	11,327.00	90.03	321.21	6,251.08	5,010.41	2,249.89	-4,556.92	0.24	0.03	0.24	6,598.46	INCL	
5/21/2014	11,423.00	89.93	320.79	6,251.12	5,103.10	2,324.49	-4,617.34	0.45	-0.10	-0.44	6,694.46	INCL	
5/21/2014	11,519.00	90.07	321.25	6,251.12	5,195.78	2,399.12	-4,677.73	0.50	0.15	0.48	6,790.46	INCL	
5/21/2014	11,614.00	90.00	320.88	6,251.06	5,287.47	2,473.02	-4,737.43	0.40	-0.07	-0.39	6,885.46	INCL	
5/21/2014	11,709.00	90.21	321.60	6,250.88	5,379.09	2,547.10	-4,796.90	0.79	0.22	0.76	6,980.46	INCL	
5/21/2014	11,804.00	90.00	320.75	6,250.71	5,470.74	2,621.11	-4,856.46	0.92	-0.22	-0.89	7,075.46	INCL	
5/21/2014	11,900.00	90.21	321.47	6,250.53	5,563.38	2,695.83	-4,916.73	0.78	0.22	0.75	7,171.46	INCL	
5/21/2014	11,995.00	90.17	321.49	6,250.22	5,654.90	2,770.15	-4,975.90	0.05	-0.04	0.02	7,266.46	INCL	
5/21/2014	12,090.00	89.83	320.81	6,250.22	5,746.55	2,844.14	-5,035.49	0.80	-0.36	-0.72	7,361.46	INCL	
5/21/2014	12,184.00	89.73	321.02	6,250.58	5,837.35	2,917.10	-5,094.75	0.25	-0.11	0.22	7,455.46	INCL	
5/21/2014	12,279.00	90.03	321.14	6,250.78	5,929.04	2,991.01	-5,154.43	0.34	0.32	0.13	7,550.46	INCL	

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Well Name: PENS2JHS

API 4708510074	Surface Legal Location	Field PENS	Permit Number	State West Virginia	Well Configuration Type HORIZONTAL
Ground Elevation (ft) 1,084.00	Casing Flange Elevation (ft) 1,083.25	KB-Ground Distance (ft) 25.50	KB-Casing Flange Distance (ft) 26.25	Spud Date (Conductor) 1/13/2014 17:30	Rig Release Date 5/24/2014 18:00

Survey Data

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Build (°/100ft)	Turn (°/100ft)	Unwrap Displace (ft)	Method	Survey Company
5/21/2014	12,374.00	90.65	320.85	6,250.22	6,020.76	3,064.84	-5,214.22	0.72	0.65	-0.31	7,645.46	INCL	
5/21/2014	12,469.00	90.48	320.41	6,249.28	6,112.64	3,138.27	-5,274.48	0.50	-0.18	-0.46	7,740.45	INCL	
5/21/2014	12,564.00	90.69	319.91	6,248.31	6,204.71	3,211.21	-5,335.34	0.57	0.22	-0.53	7,835.45	INCL	
5/21/2014	12,658.00	89.76	318.78	6,247.94	6,296.14	3,282.52	-5,396.58	1.56	-0.99	-1.20	7,929.44	INCL	
5/21/2014	12,754.00	90.41	319.11	6,247.80	6,389.66	3,354.92	-5,459.63	0.76	0.68	0.34	8,025.44	INCL	
5/21/2014	12,849.00	91.00	319.64	6,246.63	6,482.05	3,427.01	-5,521.48	0.83	0.62	0.56	8,120.43	INCL	
5/21/2014	12,945.00	90.69	319.81	6,245.21	6,575.26	3,500.25	-5,583.53	0.37	-0.32	0.18	8,216.42	INCL	
5/21/2014	13,040.00	90.76	319.09	6,244.01	6,667.61	3,572.43	-5,645.29	0.76	0.07	-0.76	8,311.41	INCL	
5/21/2014	13,136.00	90.76	319.36	6,242.74	6,761.02	3,645.12	-5,707.98	0.28	0.00	0.28	8,407.41	INCL	
5/21/2014	13,231.00	90.52	318.49	6,241.68	6,853.58	3,716.73	-5,770.39	0.95	-0.25	-0.92	8,502.40	INCL	
5/21/2014	13,327.00	90.55	318.90	6,240.78	6,947.19	3,788.84	-5,833.76	0.43	0.03	0.43	8,598.39	INCL	
5/21/2014	13,422.00	91.30	319.57	6,239.25	7,039.62	3,860.78	-5,895.78	1.06	0.79	0.71	8,693.38	INCL	
5/21/2014	13,517.00	90.86	318.91	6,237.46	7,132.04	3,932.73	-5,957.79	0.83	-0.46	-0.69	8,788.36	INCL	
5/21/2014	13,613.00	91.13	319.98	6,235.79	7,225.36	4,005.66	-6,020.20	1.15	0.28	1.11	8,884.35	INCL	
5/21/2014	13,709.00	90.93	320.73	6,234.06	7,318.31	4,079.56	-6,081.44	0.81	-0.21	0.78	8,980.33	INCL	
5/21/2014	13,804.00	90.72	320.65	6,232.69	7,410.16	4,153.06	-6,141.62	0.24	-0.22	-0.08	9,075.32	INCL	
5/21/2014	13,899.00	90.41	320.62	6,231.76	7,502.04	4,226.50	-6,201.87	0.33	-0.33	-0.03	9,170.32	INCL	
5/21/2014	13,995.00	90.17	320.18	6,231.27	7,594.98	4,300.47	-6,263.06	0.52	-0.25	-0.46	9,266.31	INCL	
5/21/2014	14,089.00	90.79	321.76	6,230.48	7,685.75	4,373.49	-6,322.25	1.81	0.66	1.68	9,360.31	INCL	
5/21/2014	14,185.00	90.27	320.77	6,229.60	7,778.32	4,448.37	-6,382.32	1.16	-0.54	-1.03	9,456.30	INCL	
5/21/2014	14,280.00	89.93	319.84	6,229.43	7,870.33	4,521.46	-6,442.99	1.04	-0.36	-0.98	9,551.30	INCL	
5/22/2014	14,375.00	91.06	322.08	6,228.61	7,962.06	4,595.24	-6,502.82	2.64	1.19	2.36	9,646.29	INCL	
5/22/2014	14,470.00	90.86	323.91	6,227.02	8,052.85	4,671.09	-6,559.99	1.94	-0.21	1.93	9,741.27	INCL	
5/22/2014	14,566.00	90.96	323.93	6,225.49	8,144.14	4,748.67	-6,616.52	0.11	0.10	0.02	9,837.26	INCL	
5/22/2014	14,661.00	90.58	324.34	6,224.22	8,234.37	4,825.65	-6,672.17	0.59	-0.40	0.43	9,932.25	INCL	
5/22/2014	14,720.00	90.31	323.93	6,223.76	8,290.41	4,873.46	-6,706.74	0.83	-0.46	-0.69	9,991.25	INCL	
5/22/2014	14,802.00	90.31	323.93	6,223.32	8,368.38	4,939.74	-6,755.02	0.00	0.00	0.00	10,073.25	PROJ	

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