



Southwestern Energy Charles Frye OHI 205H Surveys Gyro + MWD 0' to 17483' MD Survey Geodetic Report (Def Survey)



Report Date: November 22, 2019 - 07:45 AM
 Client: Southwestern Energy
 Field: WV Ohio County (NAD 83 UTM 17N)
 Structure / Slot: Southwestern Energy Charles Frye OHI pad / Charles Frye OHI 205H
 Well: Charles Frye OHI 205H
 Borehole: Original Borehole
 UTM / APH: Unknown / Unknown
 Survey Name: Southwestern Energy Charles Frye OHI 205H Surveys Gyro + MWD 0' to 17483' MD
 Survey Date: November 10, 2019
 Tort / AHD / DDI / ERD Ratio: 273.001' / 12704.940 ft / 6.968 / 1.947
 Coordinate Reference System: NAD83 UTM Zone 17N, US Feet
 Location Lat / Long: N 40° 3' 10.9200" W 80° 37' 31.3637"
 Location Grid N/E Y/X: N 14546333.571 NUS, E 1758777.839 NUS
 CRS Grid Convergence Angle: 0.2722°
 Grid Scale Factor: 0.99961602
 Version / Patch: 2.10.782.0

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 339.477° (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: KB
 TVD Reference Elevation: 1292.800 ft above MSL
 Seabed / Ground Elevation: 1266.800 ft above MSL
 Magnetic Declination: -8.312°
 Total Gravity Field Strength: 999.3518mg (9.0665 Based)
 Gravity Model: GARM
 Total Magnetic Field Strength: 52.496.614 nT
 Magnetic Dip Angle: 67.163°
 Declination Date: November 10, 2019
 Magnetic Declination Model: HDGM 2019
 North Reference: Grid North
 Grid Convergence Used: 0.2722°
 Total Corr Mag North-Grid: -8.5839°
 North Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azim (Grid)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft)	TF (ft)	BR (ft)	TR (ft)	Northing (NUS)	Easting (EUS)	Latitude (°)	Longitude (°)	Directional Difficulty Index
Well	0.00	0.00	0.00	0.00	-1292.80	0.00	0.00	0.00	N/A	165.11M	N/A	N/A	14546333.57	1758777.84	40.05303332	-80.57703156	0.00
Marker MuLine	26.00	0.07	165.11	26.00	-1266.80	-0.02	-0.02	0.00	0.27	165.11M	0.27	0.00	14546333.56	1758777.84	40.05303332	-80.57703156	0.00
	147.00	0.40	165.11	147.00	-1145.80	-0.51	-0.50	0.13	0.27	169.55M	0.27	0.00	14546333.08	1758777.97	40.05305200	-80.57703111	0.00
	206.00	0.33	169.55	206.00	-1084.80	-0.90	-0.87	0.22	0.12	160.29M	-0.11	7.28	14546332.70	1758778.15	40.05305096	-80.57703081	0.00
	296.00	0.16	160.28	296.00	-984.80	-1.28	-1.25	0.31	0.19	144.70M	-0.19	-10.30	14546332.32	1758778.15	40.05304963	-80.57703050	0.00
	389.00	0.23	144.70	389.00	-903.80	-1.58	-1.52	0.46	0.10	149.99M	0.08	-17.12	14546332.06	1758778.30	40.05304919	-80.57702997	0.07
	478.00	0.11	149.99	478.00	-814.80	-1.74	-1.64	0.54	0.14	154.94M	0.04	-5.94	14546331.84	1758778.44	40.05304859	-80.57702943	0.20
	571.00	0.06	150.00	571.00	-721.80	-1.89	-1.77	0.65	0.17	160.55M	-0.06	-155.58	14546331.80	1758778.48	40.05304848	-80.57702928	0.29
	663.00	0.09	150.00	663.00	-629.80	-1.78	-1.67	0.82	0.06	347.85M	0.04	-36.17	14546331.90	1758778.46	40.05304877	-80.57702939	0.34
	782.00	0.36	147.85	781.99	-510.81	-1.32	-1.22	1.00	0.23	351.79M	0.23	13.30	14546332.35	1758778.34	40.05305000	-80.57702982	0.53
	875.00	0.59	147.85	874.99	-417.81	-0.56	-0.46	0.37	0.25	332.70M	0.25	4.19	14546331.11	1758778.21	40.05305029	-80.57703027	0.71
	967.00	0.47	147.85	966.99	-325.81	0.12	0.32	0.51	0.43	48.97M	-0.13	45.13	14546333.89	1758778.35	40.05305044	-80.57702976	0.91
	1060.00	0.79	147.85	1059.99	-233.82	0.62	1.06	1.20	0.39	61.24M	0.34	16.88	14546334.63	1758778.04	40.05305026	-80.57702927	1.08
	1153.00	1.50	81.20	1152.99	-139.84	2.07	2.07	2.75	0.80	72.96M	0.76	13.15	14546335.54	1758778.59	40.05305000	-80.57702902	1.33
	1245.00	2.38	72.36	1244.91	-47.89	1.05	3.23	5.63	1.04	74.57M	0.96	12.13	14546336.60	1758783.46	40.05306215	-80.57701143	1.61
	1338.00	4.15	74.57	1337.78	44.98	0.66	4.71	10.71	1.91	72.99M	1.90	2.38	14546338.28	1758783.54	40.05306915	-80.57699234	1.85
	1431.00	5.79	72.99	1430.40	137.60	0.07	6.98	18.44	1.77	68.75M	1.76	-1.70	14546340.55	1758796.27	40.05307226	-80.57699559	2.24
	1524.00	7.22	68.75	1522.80	230.00	-0.14	10.47	28.37	1.62	67.85M	1.54	-4.56	14546344.03	1758806.20	40.05308172	-80.57699305	2.48
	1616.00	8.74	67.85	1613.91	321.11	0.13	15.20	40.24	1.66	19.24M	1.65	-0.98	14546346.76	1758818.06	40.05309456	-80.57698759	2.69
	1708.00	10.40	71.03	1705.61	412.81	0.10	20.59	54.72	1.87	6.91M	1.78	3.42	14546354.15	1758933.54	40.05310917	-80.57698076	2.88
	1802.00	11.88	71.75	1799.89	504.09	-0.50	26.27	71.80	1.38	11.97M	1.38	0.77	14546359.83	1758948.41	40.05312453	-80.57677537	3.03
	1898.00	13.79	68.75	1897.76	594.06	-1.94	32.31	82.31	1.31	36.45M	1.31	-2.50	14546360.80	1758953.35	40.05313623	-80.57676908	3.17
	1987.00	13.86	67.63	1977.27	684.47	-0.93	40.25	110.17	1.31	100.89M	1.08	-3.25	14546373.80	1758887.96	40.05316240	-80.57663737	3.29
	2033.00	13.76	65.18	2021.94	729.14	-0.34	44.64	120.23	1.29	143.11M	-0.22	-5.33	14546378.20	1758898.02	40.05317433	-80.57660136	3.34
	2134.00	13.15	63.14	2120.17	827.37	1.83	54.87	141.38	1.77	61.07M	-0.60	-2.02	14546388.42	1758919.16	40.05320215	-80.57658263	3.43
	2181.00	13.25	62.36	2180.93	873.13	3.08	59.79	150.92	1.46	46.89M	0.21	-1.94	14546393.34	1758929.70	40.05321551	-80.57649146	3.47
	2274.00	15.19	69.74	2256.08	963.28	4.35	66.95	171.80	2.85	143.47M	2.09	7.68	14546402.50	1758949.57	40.05324040	-80.57641674	3.56
	2368.00	13.69	73.86	2345.13	1052.32	5.62	74.24	194.71	1.80	139.75M	-1.41	4.48	14546409.74	1758971.48	40.05326526	-80.57633833	3.67
	2461.00	13.16	76.63	2431.67	1136.87	1.37	81.51	213.83	1.10	41.06M	-0.82	3.11	14546415.05	1758991.59	40.05332450	-80.57626367	3.73
	2554.00	14.20	80.23	2521.06	1228.28	-0.24	85.45	235.14	1.48	3.48M	1.13	3.91	14546419.38	1759012.89	40.05332894	-80.57619018	3.79
	2643.00	16.71	79.70	2610.69	1317.89	-6.54	90.17	259.54	2.70	4.97M	2.70	-0.57	14546423.71	1759033.28	40.05329750	-80.57610265	3.88
	2733.00	18.54	80.20	2699.32	1406.52	-11.66	95.08	287.27	1.97	1.11M	1.97	-0.54	14546428.62	1759005.07	40.05331061	-80.57603382	3.85
	2828.00	19.96	80.12	2787.12	1494.32	-17.35	100.32	317.48	1.53	14.27M	1.53	-0.09	14546433.85	1759006.19	40.05332460	-80.57598952	4.01
	2915.00	21.87	78.62	2870.25	1577.45	-22.84	104.14	348.71	2.21	36.07M	2.15	-1.48	14546439.67	1759125.41	40.05334017	-80.57591646	4.08
	3006.00	23.15	76.48	2956.16	1663.36	-27.88	113.78	383.46	1.68	69.82M	1.38	-2.52	14546447.30	1759167.17	40.05336967	-80.57582984	4.14
	3101.00	24.00	81.60	3041.41	1748.81	-34.09	120.81	419.67	2.38	102.54M	0.91	5.51	14546454.34	1759197.54	40.05337951	-80.57575297	4.21
	3198.00	23.79	79.02	3125.33	1832.81	-41.08	127.08	455.69	1.16	80.45M	1.16	-2.80	14546460.80	1759234.35	40.05339623	-80.57568608	4.30
	3286.00	24.00	76.30	3210.56	1917.76	-46.45	135.13	493.48	1.21	92.82M	0.23	-2.92	14546468.65	1759271.13	40.05341796	-80.57562652	4.30
	3379.00	23.97	72.66	3295.53	2002.73	-49.75	145.24	529.89	1.59	95.71M	-0.03	-3.91	14546478.76	1759307.53	40.05344513	-80.575513629	4.35
	3472.00	23.89	75.12	3380.54	2087.74	-52.65	155.71	566.13	1.08	24.62M	-0.09	2.65	14546489.22	1759343.75	40.05347339	-80.57540066	4.39
	3564.00	24.21	74.86	3464.58	2171.78	-56.24	165.40	602.28	0.28	153.35M	0.25	-0.28	14546498.91	1759379.88	40.05349952	-80.57487739	4.42
	3657.00	23.72	75.36	3549.59	2256.79	-59.94	175.09	638.72	0.48	45.09M	-0.43	0.54	14546509.20	1759416.31	40.05352952	-80.57474705	4.45
	3750.00	23.75	76.64	3631.62	2339.82	-64.10	184.84	674.94	1.80	139.75M	-1.41	4.48	14546520.74	1759451.48	40.05354946	-80.57461320	4.49
	3843.00	23.47	74.32	3713.22	2420.42	-67.88	193.66	709.06	1.37	52.78M	-0.88	-0.88	14546532.45	1759486.63	40.05357375	-80.57449847	4.52
	3936.00	23.27	76.81	3798.27	2505.47	-71.88	202.32	745.50	1.38	131.57M	0.86	2.68	14546535.81	1759523.05	40.05359868	-80.57436514	4.55
	4022.00	24.81	78.11	3883.20	2590.40	-77.14	210.55	782.48	0.75	52.04M	-0.49	1.40	14546544.04	1759560.02	40.05362109	-80.57423391	4.58
	4114.00	24.99	74.65	3969.98	2674.18	-81.68	219.82	819.40	2.01	100.09M	1.28	-3.78	14546553.01	1759596.92	40.05364233	-80.57410089	4.62
	4207.00	24.87	76.39	4051.32	2758.52	-85.80	229.32	857.35	0.80	26.3R	-0.13	1.87	14546562.81	1759634.85	40.05367164	-80.57396516	4.64
	4300.00	25.58	77.20	4135.45	2842.65	-90.86	238.37	895.63	0.85	107.11M	0.76	0.87	14546571.88	1759673.43	40.05369957	-80.573832717	4.67
	4392.00	25.23	74.32	4218.59	2925.79	-95.18	248.07	934.18	1.40	178.56M	-0.38	-3.13	14546581.25	1759711.69	40.05372710	-80.57370636	4.70
	4485.00	24.66	74.31	4302.88	3010.06	-98.48	258.69	971.94	0.61	37.49M	-0.61	-0.01	14546592.15	1759749.41	40.05375071	-80.57355331	4.72
	4578.00	26.80	76.48	4388.98	3094.18	-102.69	268.68	1009.37	1.66	86.41M	1.33	2.31	14546602.15	1759787.82	40.05377276	-80.57341787	4.75
	4671.00	26.39	74.04	4467.77	3174.97	-106.57	278.78	1048.71	0.99	99.66M	0.54	-2.69	14546612.24	1759826.14	40.05380489	-80.57328074	4.78
	4764.00	26.23	71.65	4547.55	3254.75	-108.89	290.41	1086.40	1.20	155.96M	-0.18	-2.89	14546623.87	1759863.82	40.05383632	-80.57314592	4.81
	4850.00	24.87	73.10	4631.46	3338.66	-110.91	302.57	1124.62	1.61	133.19M	-1.46	1.56	14546636.02	1759902.02	40.05386818	-80.57300918	4.83
	4942.00	24.53	71.6														

Comments	MD (ft)	Incl (°)	Azim (°)	Grid (ft)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	TF (ft)	BR (ft/100ft)	TR (ft/100ft)	Northing (ft)	Easting (ft)	Latitude (N)	Longitude (W)	Directional Difficult Index
	8736.00	90.73	328.87	6496.90	5254.10	2004.45	2474.41	664.36	1.03	98.74	0.30	-0.99	1.45492325	1758441.94	40.06636360	-90.57461622	5.97	
	8826.00	90.45	330.69	6495.95	5203.15	2175.12	2553.90	616.05	2.00	76.27	-0.30	1.98	1.45488846	1759395.66	40.06055800	-90.57478027	5.99	
	8921.00	90.56	330.16	6495.13	5202.33	2266.96	2634.77	572.16	0.58	80.79	0.12	-0.57	1.45489673	1759340.77	40.06027842	-90.57484286	6.01	
	9011.00	90.62	329.79	6494.21	5201.41	2354.74	2711.83	527.62	0.42	83.81	0.07	-0.42	1.45490451	1759300.26	40.05948051	-90.57510064	6.02	
	9103.00	90.56	328.84	6493.26	5200.46	2442.77	2791.80	480.17	1.02	68.67	-0.06	-1.02	1.45491249	1759257.82	40.06071066	-90.57528881	6.04	
	9192.00	90.73	328.25	6492.25	5199.45	2533.80	2868.13	434.41	0.53	112.17	0.19	0.49	1.45492040	1759212.08	40.06092079	-90.57543087	6.05	
	9285.00	90.62	329.55	6491.16	5198.36	2625.36	2948.19	387.10	0.31	102.99	-0.12	-0.29	1.45492833	1759164.79	40.06114117	-90.57558864	6.07	
	9378.00	90.56	329.29	6490.20	5197.40	2716.93	3025.25	339.79	0.29	84.19	-0.08	-0.29	1.45493635	1759117.49	40.06136156	-90.57575923	6.08	
	9470.00	90.62	329.88	6489.25	5196.45	2807.55	3107.59	293.21	0.64	79.87	0.07	0.64	1.45494439	1759070.94	40.06157994	-90.57593130	6.09	
	9563.00	90.67	329.60	6488.21	5195.44	2898.21	3187.91	244.36	0.51	71.59	0.06	-0.30	1.45495245	1759023.98	40.06180176	-90.57610738	6.11	
	9656.00	90.60	329.63	6487.26	5194.45	2987.98	3265.86	201.38	0.98	140.66	0.31	0.93	1.45496057	1758977.17	40.06202591	-90.57628770	6.12	
	9748.00	90.34	329.94	6486.30	5193.10	3078.76	3345.68	155.85	0.86	118.39	-0.66	-0.54	1.45496879	1758933.43	40.06225331	-90.57646172	6.14	
	9836.00	90.30	330.57	6485.02	5192.82	3170.56	3426.42	109.51	0.77	43.63	-0.37	0.68	1.45497697	1758887.31	40.06247577	-90.57663219	6.15	
	9931.00	90.50	330.09	6485.22	5192.42	3262.38	3507.23	63.47	0.75	155.56	0.54	-0.52	1.45498545	1758841.29	40.06269988	-90.57680428	6.16	
	10023.00	90.39	330.04	6484.50	5191.70	3356.95	3586.95	17.57	0.13	90.90	-0.12	-0.05	1.45499414	1758795.40	40.06292642	-90.57697974	6.18	
	10115.00	90.39	329.98	6483.87	5191.07	3444.87	3667.50	-26.92	0.06	109.53	0.00	-0.06	1.45499985	1758749.33	40.06315113	-90.57715704	6.19	
	10208.00	90.34	330.64	6483.29	5190.45	3533.59	3747.10	-75.04	0.16	89.29	-0.05	-0.15	1.45500792	1758703.82	40.06337404	-90.57733607	6.20	
	10298.00	90.45	330.13	6482.66	5189.86	3624.35	3825.03	-120.06	0.34	94.83	0.12	0.32	1.45501572	1758657.82	40.06359574	-90.57751959	6.21	
	10391.00	90.39	329.42	6481.96	5189.18	3716.02	3905.38	-166.88	0.77	HS	-0.06	-0.78	1.45502345	1758611.03	40.06381763	-90.57769447	6.22	
	10484.00	90.50	329.42	6481.26	5188.46	3807.59	3985.45	-214.19	0.12	106.99	0.12	0.00	1.45503114	1758565.73	40.06403932	-90.57787294	6.23	
	10576.00	90.59	329.78	6480.54	5187.74	3898.22	4064.79	-260.74	0.41	62.74	-0.12	-0.39	1.45503880	1758519.20	40.06426147	-90.57805121	6.25	
	10669.00	90.56	329.45	6479.77	5186.97	3989.84	4145.02	-307.78	0.40	75.48	0.16	-0.35	1.45504659	1758473.18	40.06448357	-90.57822901	6.26	
	10762.00	91.18	331.84	6479.36	5186.58	4081.72	4226.06	-353.86	2.25	112.67	0.67	-1.17	1.45505438	1758427.11	40.06470562	-90.57840623	6.27	
	10853.00	90.39	329.85	6477.11	5184.31	4171.69	4305.56	-397.62	2.25	58.11	-0.87	-2.08	1.45506217	1758380.37	40.06492772	-90.57858396	6.29	
	10946.00	90.67	330.40	6476.25	5183.45	4263.46	4386.24	-443.87	0.57	106.96	0.40	0.48	1.45507011	1758334.14	40.06514986	-90.57876166	6.30	
	11038.00	90.50	330.04	6475.39	5182.46	4355.25	4466.95	-490.06	0.40	85.81	-0.12	-0.39	1.45507800	1758287.97	40.06537192	-90.57893937	6.31	
	11131.00	90.62	330.86	6474.31	5181.51	4446.10	4546.98	-535.43	0.89	96.06	0.07	0.89	1.45508589	1758242.62	40.06559492	-90.57911703	6.32	
	11221.00	90.50	329.73	6473.43	5180.63	4534.94	4625.15	-580.02	1.26	53.13	-0.13	-1.26	1.45509383	1758196.04	40.06581707	-90.57929454	6.34	
	11313.00	90.56	329.65	6472.58	5179.78	4624.57	4704.57	-626.45	1.11	74.74	0.07	-0.05	1.45510182	1758150.33	40.06603912	-90.57947197	6.35	
	11406.00	90.62	329.43	6471.82	5178.82	4714.73	4784.73	-673.59	0.25	146.31	0.06	-0.24	1.45510986	1758104.51	40.06626117	-90.57964924	6.36	
	11499.00	90.50	329.35	6471.01	5177.97	4804.76	4864.76	-720.96	0.19	83.94	-0.13	-0.09	1.45511796	1758058.39	40.06648322	-90.57982677	6.37	
	11592.00	90.39	331.23	6470.29	5177.19	4894.53	4945.53	-767.03	2.02	63.11	-0.12	2.02	1.45512619	1758013.10	40.06670527	-90.57999907	6.38	
	11684.00	90.56	329.78	6469.23	5176.43	4981.43	5025.60	-812.33	1.59	63.49	0.18	-1.58	1.45513454	1757967.62	40.06692732	-90.58017146	6.39	
	11777.00	90.62	329.80	6468.27	5175.47	5063.11	5108.01	-859.05	0.14	89.64	0.06	0.18	1.45514291	1757921.12	40.06714938	-90.58034412	6.40	
	11870.00	90.45	329.80	6467.40	5174.60	5147.67	5196.05	-906.39	1.08	107.63	-0.18	-1.08	1.45515132	1757875.80	40.06737101	-90.58051690	6.41	
	11962.00	90.11	329.87	6466.95	5174.15	5265.28	5285.27	-953.17	1.22	34.48	-0.37	1.16	1.45515981	1757830.45	40.06759274	-90.58068971	6.42	
	12054.00	90.62	329.62	6466.38	5173.28	5353.97	5343.05	-1000.45	0.69	96.28	0.57	-0.39	1.45516836	1757785.78	40.06781438	-90.58086251	6.43	
	12146.00	90.50	330.71	6465.47	5172.67	5445.74	5433.02	-1044.71	1.19	87.13	-0.13	1.17	1.45517693	1757740.91	40.06803601	-90.58103511	6.44	
	12238.00	90.56	329.51	6464.81	5171.81	5537.49	5524.34	-1091.06	1.29	40.69	0.06	-1.29	1.45518559	1757695.29	40.06825764	-90.58120766	6.46	
	12331.00	90.64	329.76	6464.38	5170.84	5629.13	5611.37	-1137.67	0.80	117.41	0.24	0.80	1.45519436	1757650.51	40.06847917	-90.58138016	6.46	
	12423.00	90.56	329.21	6463.25	5169.55	5719.71	5693.82	-1184.79	0.60	170.54	-0.30	-0.51	1.45520325	1757605.20	40.06870069	-90.58155261	6.46	
	12516.00	90.50	329.20	6461.49	5168.69	5811.22	5774.70	-1232.40	0.07	96.69	-0.06	-0.01	1.45521226	1757560.11	40.06892220	-90.58172511	6.48	
	12608.00	90.34	330.57	6460.81	5168.01	5901.83	5853.28	-1278.56	1.00	12.88	-0.17	1.49	1.45522130	1757515.60	40.06914371	-90.58189760	6.48	
	12701.00	90.67	330.67	6459.90	5167.10	5993.81	5934.32	-1324.18	0.49	92.74	0.47	0.11	1.45523041	1757471.47	40.06936522	-90.58207006	6.50	
	12794.00	90.78	329.38	6459.73	5166.93	6086.40	6014.46	-1371.34	2.47	91.29	-0.12	-2.46	1.45523957	1757427.03	40.06958673	-90.58224252	6.52	
	12886.00	90.62	330.75	6459.59	5166.89	6176.02	6100.77	-1417.64	2.56	62.96	-0.05	-2.56	1.45524878	1757382.45	40.06980824	-90.58241497	6.53	
	12979.00	90.90	331.74	6459.46	5166.86	6265.66	6184.06	-1464.79	2.12	82.92	0.19	2.12	1.45525802	1757337.91	40.06999975	-90.58258743	6.54	
	13072.00	90.78	331.08	6459.36	5166.29	6359.36	6224.54	-1511.41	2.52	87.37	-0.13	2.52	1.45526731	1757293.61	40.07019124	-90.58275989	6.55	
	13164.00	90.90	328.45	6459.25	5166.85	6450.02	6304.01	-1557.73	2.86	93.99	0.13	-2.86	1.45527665	1757249.11	40.07038275	-90.58293235	6.57	
	13257.00	90.67	331.73	6459.17	5166.67	6541.75	6384.61	-1604.09	3.53	91.81	-0.25	3.53	1.45528604	1757204.62	40.07057426	-90.58310481	6.58	
	13350.00	90.62	329.33	6459.12	5166.62	6633.61	6465.56	-1649.84	2.58	98.79	-0.05	-2.58	1.45529548	1757160.14	40.07076577	-90.58327727	6.58	
	13443.00	90.45	330.43	6459.06	5166.76	6725.30	6546.50	-1696.50	1.20	90.9	-0.18	1.16	1.45530497	1757115.99	40.07095728	-90.58344973	6.60	
	13535.00	90.56	329.11	6458.93	5167.03	6815.98	6625.49	-1742.82	1.44	110.99	0.00	-0.00	1.45531456	1757071.69	40.07114879	-90.58362219	6.62	
	13628.00	90.39	329.27	6449.15	5166.35	6907.48	6706.36	-1790.45	0.18	72.19	-0.06	0.17	1.45532424	1757027.68	40.07134030	-90.58379465	6.62	
	13721.00	90.56	329.80	6448.38	5165.58	6999.28	6785.32	-1837.90	0.60	115.64	0.16	0.57	1.45533407	1756983.95	40.07153181	-90.58396711	6.64	
	13813.00	90.22	330.40	6447.75	5164.85	7089.85	6865.27	-1885.46	0.75	96.13	-0.37	0.65	1.45534396	1756940.11	40.07172332	-90.58413957	6.64	
	13906.00	90.60	328.91	6447.53	5164.73	7181.48	6945.52	-1930.44	1.61	64.48	-0.17	-1.60	1.45535391	1756896.44	40.07191483	-90.58431203	6.65	
	13999.00	90.39	329.60	6447.16	5164.36	7273.01	7025.45	-1977.89	0.82	135.9	0.3							

Southwestern Energy Charles Frye OHI 205H Surveys Gyro + MWD 0' to 17483' MD Survey Geodetic Report (Def Survey)



Report Date: November 22, 2019 - 07:45 AM
Client: Southwestern Energy
Structure: WV Ohio County (NAD 83 UTM 17N)
Well: Charles Frye OHI 205H
Survey Name: Southwestern Energy Charles Frye OHI 205H Surveys Gyro + MWD 0' to 17483' MD

Table with columns: Comments, MD (ft), Incd (degrees), Azim Grid (degrees), TVD (ft), TVDSS (ft), VSECE (ft), NS (ft), EW (ft), DLS (ft), TF (ft), BR (ft), TR (ft), Northing (ft), Easting (ft), Latitude (degrees), Longitude (degrees), Directional (degrees). Contains a large list of survey data points.

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Comments	MD	Incl	Azim	Grid	TVD	TVSS	VSEC	NS	EW	DLS	TF	BR	TR	Northing	Eastng	Latitude	Longitude	Directional
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
8736.00	90.73	328.87	6486.90	5204.10	2704.45	2474.41	654.36	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
8829.00	90.45	330.89	6485.86	5203.15	2175.12	2553.90	618.05	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
8921.00	90.56	330.16	6485.13	5202.33	2266.96	2634.77	572.16	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
9010.00	90.62	329.79	6494.21	5201.41	2354.74	2711.83	537.62	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
9103.00	90.56	328.84	6493.26	5200.46	2446.27	2791.80	490.17	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
9192.00	90.73	329.78	6492.25	5199.45	2533.90	2868.13	434.41	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
9285.00	90.62	329.55	6491.16	5198.36	2625.36	2948.19	387.10	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
9378.00	90.56	329.29	6490.20	5197.40	2716.83	3028.25	339.79	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
9470.00	90.62	329.86	6489.25	5196.45	2807.55	3107.59	293.21	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
9563.00	90.62	329.60	6488.21	5195.41	2898.21	3107.91	2463.35	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
9656.00	90.56	329.44	6487.25	5194.36	2988.87	3107.91	2463.35	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
9749.00	90.34	329.94	6486.30	5193.10	3078.76	3345.68	155.85	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
9836.00	90.34	330.57	6485.62	5192.82	3170.56	3426.42	109.51	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
9931.00	90.50	330.09	6485.22	5192.42	3262.38	3507.23	63.47	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
10023.00	90.39	330.04	6484.50	5191.70	3353.14	3586.95	17.57	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
10116.00	90.39	329.96	6483.87	5191.07	3444.07	3667.50	-26.92	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
10208.00	90.34	329.84	6483.28	5190.48	3535.55	3747.10	0.16	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
10298.00	90.45	330.13	6482.66	5189.86	3624.35	3825.03	-120.06	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
10391.00	90.39	329.42	6481.98	5189.18	3716.02	3905.38	-166.88	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
10484.00	90.50	329.42	6481.26	5188.46	3807.59	3985.45	-214.19	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
10578.00	90.39	329.78	6480.54	5187.74	3898.22	4064.79	-260.74	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
10670.00	90.56	329.45	6479.77	5186.97	3989.84	4145.02	-307.78	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
10762.00	91.18	331.04	6479.36	5186.56	4081.77	4226.96	-353.34	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
10853.00	90.39	329.95	6477.11	5184.31	4171.69	4305.56	-397.62	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
10946.00	90.62	329.67	6475.25	5182.81	4263.46	4386.24	-443.67	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
11038.00	90.56	330.04	6473.29	5182.40	4355.25	4466.95	-490.06	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
11131.00	90.62	330.06	6471.31	5181.51	4446.10	4546.98	-535.43	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
11223.00	90.50	329.73	6473.43	5180.63	4534.94	4625.15	-580.02	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
11313.00	90.56	329.85	6472.58	5179.78	4625.60	4704.57	-626.45	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
11408.00	90.62	329.43	6471.62	5178.82	4717.20	4784.73	-673.58	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
11499.00	90.50	329.55	6470.71	5177.91	4809.78	4864.76	-720.85	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
11592.00	90.39	329.74	6469.89	5177.19	4890.20	4945.53	-767.03	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
11684.00	90.56	329.76	6469.23	5176.43	4971.43	5025.60	-813.23	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
11777.00	90.62	329.90	6468.27	5175.47	5053.11	5106.01	-859.05	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
11870.00	90.45	328.90	6467.40	5174.60	5134.67	5186.05	-906.39	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
11962.00	90.11	329.97	6466.95	5174.15	5225.28	5265.27	-953.17	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
12054.00	90.62	329.82	6466.38	5173.36	5305.97	5343.05	-999.45	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
12145.00	90.50	330.51	6465.47	5172.67	5385.74	5423.72	-1046.11	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
12238.00	90.56	329.51	6464.61	5171.81	5467.49	5504.34	-1091.06	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
12330.00	90.62	329.44	6463.86	5170.98	5549.28	5583.71	-1137.57	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
12423.00	90.56	329.21	6463.20	5169.25	5633.82	5664.18	-1184.79	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
12516.00	90.50	329.20	6462.49	5168.58	5717.22	5743.70	-1232.40	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
12608.00	90.34	330.57	6460.81	5168.01	5801.33	5823.28	-1278.56	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
12701.00	90.78	330.67	6459.90	5167.10	5893.61	5904.32	-1324.18	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
12794.00	90.67	328.38	6458.73	5166.93	5985.40	5984.46	-1371.24	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
12886.00	90.62	330.75	6457.89	5166.86	6075.02	6075.02	-1418.34	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
12979.00	90.62	331.06	6456.96	5166.86	6166.56	6166.56	-1465.79	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
13072.00	90.78	331.06	6456.09	5166.29	6254.54	6254.54	-1511.41	3107.91	2463.35	0.37	71.56R	0.30	-0.30	14549202.25	175924.09	-0.01801305	-0.01801305	6.11
13164.00	90.90	328.45	6455.75	5166.														