



CNX SHR-37K-HMS Surveys 0ft to 19477ft MD Survey Geodetic Report

(Def Survey)

Report Date: April 18, 2022 - 11:29 AM
Client: CNX
Field: WV Tyler County (NAD 27)
Structure / Slot: CNX SHR-37 Pad / SHR-37K-HSM
Well: SHR-37K-HSM
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: CNX SHR-37K-HMS Surveys 0ft to 19477ft MD
Survey Date: April 10, 2022
Tort / AHD / DDI / ERD Ratio: 318.994 ° / 15025.641 ft / 7.170 / 2.383
Coordinate Reference System: NAD27 West Virginia State Plane, Northern Zone, US Feet
Location Lat / Long: N 39° 21' 12.21683", W 80° 50' 45.41638"
Location Grid N/E Y/X: N 313674.254 ftUS, E 1619404.962 ftUS
CRS Grid Convergence Angle: -0.8584 °
Grid Scale Factor: 0.999952
Version / Patch: 2.10.829.1

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 161.000 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 857.000 ft above MSL
Seabed / Ground Elevation: 828.000 ft above MSL
Magnetic Declination: -7.461 °
Total Gravity Field Strength: 999.3376mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 51589.680 nT
Magnetic Dip Angle: 66.190 °
Declination Date: April 10, 2022
Magnetic Declination Model: HDGM 2022
North Reference: Grid North
Grid Convergence Used: -0.8584 °
Total Corr Mag North->Grid North: -6.6026 °
Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	BR (°/100ft)	TR (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (°)	Longitude (°)
Surface Location	0.00	0.00	0.00	0.00	-857.00	0.00	0.00	0.00	N/A	N/A	N/A	313674.25	1619404.96	39.35339356	-80.84594899
	100.00	0.28	119.62	100.00	-757.00	0.18	-0.12	0.21	0.28	0.28	0.00	313674.13	1619405.17	39.35339324	-80.84594824
	125.00	0.20	125.83	125.00	-732.00	0.26	-0.18	0.30	0.34	-0.32	24.84	313674.08	1619405.26	39.35339309	-80.84594792
	150.00	0.22	163.80	150.00	-707.00	0.35	-0.25	0.35	0.55	0.08	151.88	313674.01	1619405.31	39.35339290	-80.84594774
	175.00	0.56	160.79	175.00	-682.00	0.52	-0.41	0.40	1.36	1.36	-12.04	313673.84	1619405.37	39.35339246	-80.84594755
	200.00	0.49	158.31	200.00	-657.00	0.75	-0.62	0.48	0.29	-0.28	-9.92	313673.63	1619405.44	39.35339187	-80.84594725
	225.00	0.24	139.75	225.00	-632.00	0.90	-0.76	0.56	1.09	-1.00	-74.24	313673.49	1619405.52	39.35339149	-80.84594699
	250.00	0.23	192.55	250.00	-607.00	0.99	-0.85	0.58	0.84	-0.04	211.20	313673.40	1619405.54	39.35339125	-80.84594690
	275.00	0.33	218.53	275.00	-582.00	1.08	-0.96	0.52	0.64	0.40	103.92	313673.30	1619405.49	39.35339096	-80.84594709
	300.00	0.39	209.53	300.00	-557.00	1.17	-1.09	0.44	0.33	0.24	-36.00	313673.17	1619405.40	39.35339060	-80.84594739
	325.00	0.35	191.95	325.00	-532.00	1.29	-1.24	0.38	0.48	-0.16	-70.32	313673.02	1619405.34	39.35339018	-80.84594759
	350.00	0.40	155.99	350.00	-507.00	1.45	-1.39	0.40	0.95	0.20	-143.84	313672.86	1619405.36	39.35338976	-80.84594751
	370.00	0.44	157.82	369.99	-487.01	1.59	-1.53	0.46	0.21	0.20	9.15	313672.73	1619405.42	39.35338939	-80.84594730
	422.00	0.34	215.42	421.99	-435.01	1.88	-1.84	0.44	0.74	-0.19	110.77	313672.42	1619405.40	39.35338854	-80.84594733
	515.00	0.62	199.92	514.99	-342.01	2.43	-2.53	0.11	0.33	0.30	-16.67	313671.72	1619405.07	39.35338661	-80.84594847
	609.00	0.81	222.38	608.98	-248.02	3.15	-3.50	-0.51	0.36	0.20	23.89	313670.75	1619404.45	39.35338393	-80.84595061
	702.00	1.14	196.20	701.97	-155.03	4.22	-4.88	-1.21	0.59	0.35	-28.15	313669.38	1619403.75	39.35338013	-80.84595302
	795.00	1.28	236.87	794.95	-62.05	5.23	-6.33	-2.34	0.92	0.15	43.73	313667.92	1619402.62	39.35337608	-80.84595693
	888.00	1.36	233.98	887.93	30.93	5.80	-7.55	-4.10	0.11	0.09	-3.11	313666.70	1619400.86	39.35337267	-80.84596310
	982.00	2.00	228.50	981.89	124.89	6.76	-9.29	-6.23	0.70	0.68	-5.83	313664.96	1619398.73	39.35336780	-80.84597054
	1076.00	2.05	226.43	1075.83	218.83	8.08	-11.54	-8.68	0.09	0.05	-2.20	313662.72	1619396.28	39.35336153	-80.84597907
	1169.00	3.14	232.12	1168.73	311.73	9.60	-14.25	-11.90	1.20	1.17	6.12	313660.01	1619393.07	39.35335396	-80.84599030
	1262.00	3.68	233.25	1261.56	404.56	11.33	-17.60	-16.30	0.59	0.58	1.22	313656.66	1619388.67	39.35334458	-80.84600568
	1356.00	5.07	231.96	1355.29	498.29	13.61	-21.96	-21.99	1.48	1.48	-1.37	313652.29	1619382.98	39.35333237	-80.84602557
	1450.00	5.41	231.30	1448.90	591.90	16.46	-27.29	-28.72	0.37	0.36	-0.70	313646.96	1619376.25	39.35331746	-80.84604908
	1543.00	6.89	232.90	1541.36	684.36	19.67	-33.40	-36.59	1.60	1.59	1.72	313640.86	1619368.38	39.35330037	-80.84607658
	1637.00	9.15	234.91	1634.43	777.43	23.49	-41.10	-47.20	2.42	2.40	2.14	313633.16	1619357.76	39.35327880	-80.84611370
	1730.00	10.82	236.89	1726.02	869.02	27.67	-50.12	-60.56	1.83	1.80	2.13	313624.14	1619344.40	39.35325349	-80.84616047
	1823.00	13.41	232.42	1816.94	959.94	33.24	-61.47	-76.42	2.96	2.78	-4.81	313612.79	1619328.54	39.35322169	-80.84621595
	1918.00	13.67	228.04	1909.31	1052.31	41.13	-75.69	-93.50	1.11	0.27	-4.61	313598.57	1619311.46	39.35318194	-80.84627558
	2010.00	12.42	233.51	1998.93	1141.93	48.34	-88.84	-109.54	1.91	-1.36	5.95	313585.41	1619295.43	39.35314517	-80.84633160
	2104.00	12.58	240.71	2090.71	1233.71	53.21	-99.86	-126.60	1.67	0.17	7.66	313574.40	1619278.43	39.35311422	-80.84639132
	2198.00	14.71	253.97	2182.08	1325.08	54.42	-108.17	-147.00	4.01	2.27	14.11	313566.09	1619257.97	39.35309057	-80.84646303
	2291.00	14.21	256.04	2272.13	1415.13	52.80	-114.18	-169.43	0.77	-0.54	2.23	313560.07	1619235.54	39.35307314	-80.84654200
	2384.00	14.98	254.20	2362.13	1505.13	51.13	-120.21	-192.07	0.97	0.83	-1.98	313554.05	1619212.90	39.35305567	-80.84662174
	2478.00	16.63	251.60	2452.57	1595.57	50.31	-127.77	-216.53	1.91	1.76	-2.77	313546.49	1619188.44	39.35303392	-80.84670781
	2572.00	17.93	252.08	2542.33	1685.33	49.90	-136.46	-243.06	1.39	1.38	0.51	313537.80	1619161.91	39.35300895	-80.84680115
	2665.00	19.08	250.85	2630.50	1773.52	49.67	-145.86	-271.04	1.31	1.24	-1.32	313528.41	1619133.93	39.35298202	-80.84689959
	2763.00	20.58	249.95	2722.70	1865.70	50.02	-157.02	-302.35	1.56	1.53	-0.92	313517.25	1619102.62	39.35295009	-80.84700971
	2856.00	20.57	250.33	2809.77	1952.77	50.51	-168.12	-333.09	0.14	-0.01	0.41	313506.14	1619071.88	39.35291835	-80.84711781
	2950.00	19.00	245.99	2898.23	2041.23	52.04	-179.90	-362.62	2.29	-1.67	-4.62	313494.36	1619042.36	39.35288478	-80.84722160

Schlumberger-Private

Comments	MD	Incl	Azim Grd	TVD	TVSS	VSEC	NS	EW	DLS	BR	TR	Northng	Eastng	Latitude	Longitude
	(m)	(°)	(°)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(°)	(°)
9530.00	160.58	6280.90	6283.26	6426.26	5423.90	2142.98	-3114.39	-2462.57	310560.02	310560.02	161694.51	39.34474222	-80.85448933		
9632.00	160.32	6280.82	6286.97	6423.12	5423.96	2236.97	-3202.92	-2431.12	310471.44	310471.44	1616973.96	39.34450066	-80.85437401		
9728.00	160.43	6280.49	6423.49	6423.49	5423.49	2329.96	-3290.49	-2399.66	310383.93	310383.93	1617005.42	39.34426171	-80.85425814		
9819.00	159.74	6280.14	6423.78	6423.78	5423.78	2423.96	-3378.78	-2361.42	310295.64	310295.64	1617037.66	39.34402066	-80.85413945		
9912.00	160.80	6281.03	6424.03	6424.03	5424.03	2516.93	-3466.32	-2336.03	310208.11	310208.11	1617069.05	39.34378167	-80.85402380		
10006.00	160.60	6282.74	6425.74	6425.74	5425.74	2610.92	-3555.02	-2304.96	310119.41	310119.41	1617100.11	39.34353945	-80.85390926		
10100.00	161.03	6283.30	6426.26	6426.26	5426.26	2704.91	-3643.81	-2274.12	310030.62	310030.62	1617130.95	39.34328698	-80.85379549		
10196.00	160.81	6283.59	6426.89	6426.89	5426.89	2892.91	-3821.56	-2242.29	309940.77	309940.77	1617161.79	39.34305159	-80.85366170		
10288.00	160.95	6284.63	6427.53	6427.53	5427.53	2987.90	-3911.31	-2181.77	309852.89	309852.89	1617192.19	39.34281157	-80.85356555		
10383.00	160.72	6285.56	6428.18	6428.18	5428.18	3079.89	-3998.89	-2152.82	309765.83	309765.83	1617223.30	39.34256648	-80.85345477		
10478.00	160.37	6286.40	6428.79	6428.79	5428.79	3166.87	-4086.87	-2123.93	309678.76	309678.76	1617254.25	39.34231738	-80.85334377		
10569.00	160.42	6287.36	6429.39	6429.39	5429.39	3254.86	-4175.81	-2095.06	309591.69	309591.69	1617285.20	39.34206831	-80.85323262		
10662.00	160.37	6288.24	6429.99	6429.99	5429.99	3342.85	-4264.85	-2063.19	309504.62	309504.62	1617316.15	39.34181926	-80.85312147		
10756.00	160.29	6289.05	6430.55	6430.55	5430.55	3430.84	-4352.88	-2031.32	309417.55	309417.55	1617347.10	39.34157021	-80.85301086		
10850.00	160.24	6289.86	6431.14	6431.14	5431.14	3518.83	-4440.81	-2000.45	309330.48	309330.48	1617378.05	39.34132106	-80.85289943		
10943.00	160.24	6290.65	6431.73	6431.73	5431.73	3606.82	-4528.84	-1969.58	309243.41	309243.41	1617409.00	39.34107181	-80.85278800		
11036.00	160.55	6291.45	6432.32	6432.32	5432.32	3694.85	-4616.87	-1938.71	309156.34	309156.34	1617440.00	39.34082265	-80.85267657		
11129.00	160.47	6292.22	6432.91	6432.91	5432.91	3782.81	-4704.81	-1907.84	309069.27	309069.27	1617471.00	39.34057350	-80.85256514		
11222.00	160.30	6293.00	6433.50	6433.50	5433.50	3870.80	-4792.80	-1876.97	308982.20	308982.20	1617502.00	39.34032435	-80.85245371		
11316.00	160.76	6293.78	6434.09	6434.09	5434.09	3958.79	-4880.79	-1846.10	308895.13	308895.13	1617533.00	39.34007520	-80.85234228		
11410.00	160.58	6294.52	6434.68	6434.68	5434.68	4046.78	-4968.78	-1815.23	308808.06	308808.06	1617564.00	39.33982605	-80.85223085		
11505.00	160.29	6295.26	6435.27	6435.27	5435.27	4134.77	-5056.77	-1784.36	308721.00	308721.00	1617595.00	39.33957690	-80.85211942		
11600.00	160.29	6296.00	6435.86	6435.86	5435.86	4222.76	-5144.76	-1753.49	308634.00	308634.00	1617626.00	39.33932775	-80.85200799		
11694.00	160.29	6296.74	6436.45	6436.45	5436.45	4310.75	-5232.75	-1722.62	308547.00	308547.00	1617657.00	39.33907860	-80.85189656		
11789.00	161.15	6297.48	6437.04	6437.04	5437.04	4398.74	-5320.74	-1691.75	308460.00	308460.00	1617688.00	39.33882945	-80.85178513		
11884.00	160.24	6298.22	6437.63	6437.63	5437.63	4486.73	-5408.73	-1660.88	308373.00	308373.00	1617719.00	39.33858030	-80.85167370		
11979.00	161.15	6298.96	6438.22	6438.22	5438.22	4574.72	-5496.72	-1630.01	308286.00	308286.00	1617750.00	39.33833115	-80.85156227		
12074.00	160.36	6299.70	6438.81	6438.81	5438.81	4662.71	-5584.71	-1600.14	308199.00	308199.00	1617781.00	39.33808200	-80.85145084		
12169.00	161.15	6299.99	6439.40	6439.40	5439.40	4750.70	-5672.70	-1570.27	308112.00	308112.00	1617812.00	39.33783285	-80.85133941		
12264.00	160.24	6300.74	6440.00	6440.00	5440.00	4838.69	-5760.69	-1540.40	308025.00	308025.00	1617843.00	39.33758370	-80.85122798		
12359.00	161.09	6301.48	6440.59	6440.59	5440.59	4926.68	-5848.68	-1510.53	307938.00	307938.00	1617874.00	39.33733455	-80.85111655		
12454.00	161.82	6302.22	6441.18	6441.18	5441.18	5014.67	-5936.67	-1480.66	307851.00	307851.00	1617905.00	39.33708540	-80.85100512		
12549.00	161.09	6303.00	6441.77	6441.77	5441.77	5102.66	-6024.66	-1450.79	307764.00	307764.00	1617936.00	39.33683625	-80.85089369		
12644.00	160.29	6303.74	6442.36	6442.36	5442.36	5190.65	-6112.65	-1420.92	307677.00	307677.00	1617967.00	39.33658710	-80.85078226		
12739.00	161.09	6304.48	6442.95	6442.95	5442.95	5278.64	-6200.64	-1391.05	307590.00	307590.00	1617998.00	39.33633795	-80.85067083		
12834.00	160.24	6305.22	6443.54	6443.54	5443.54	5366.63	-6288.63	-1361.18	307503.00	307503.00	1618029.00	39.33608880	-80.85055940		
12929.00	161.11	6305.96	6444.13	6444.13	5444.13	5454.62	-6376.62	-1331.31	307416.00	307416.00	1618060.00	39.33583965	-80.85044797		
13024.00	160.50	6306.70	6444.72	6444.72	5444.72	5542.61	-6464.61	-1301.44	307329.00	307329.00	1618091.00	39.33559050	-80.85033654		
13119.00	160.99	6307.44	6445.31	6445.31	5445.31	5630.60	-6552.60	-1271.57	307242.00	307242.00	1618122.00	39.33534135	-80.85022511		
13214.00	161.50	6308.18	6445.90	6445.90	5445.90	5718.59	-6640.59	-1241.70	307155.00	307155.00	1618153.00	39.33509220	-80.85011368		
13309.00	160.24	6308.92	6446.49	6446.49	5446.49	5806.58	-6728.58	-1211.83	307068.00	307068.00	1618184.00	39.33484305	-80.85000225		
13404.00	160.50	6309.66	6447.08	6447.08	5447.08	5894.57	-6816.57	-1181.96	306981.00	306981.00	1618215.00	39.33459390	-80.84989082		
13499.00	160.24	6310.40	6447.67	6447.67	5447.67	5982.56	-6904.56	-1152.09	306894.00	306894.00	1618246.00	39.33434475	-80.84977939		
13594.00	160.24	6311.14	6448.26	6448.26	5448.26	6070.55	-6992.55	-1122.22	306807.00	306807.00	1618277.00	39.33409560	-80.84966796		
13689.00	160.24	6311.88	6448.85	6448.85	5448.85	6158.54	-7080.54	-1092.35	306720.00	306720.00	1618308.00	39.33384645	-80.84955653		
13784.00	160.99	6312.62	6449.44	6449.44	5449.44	6246.53	-7168.53	-1062.48	306633.00	306633.00	1618339.00	39.33359730	-80.84944510		
13879.00	160.24	6313.36	6450.03	6450.03	5450.03	6334.52	-7256.52	-1032.61	306546.00	306546.00	1618370.00	39.33334815	-80.84933367		
13974.00	160.50	6314.10	6450.62	6450.62	5450.62	6422.51	-7344.51	-1002.74	306459.00	306459.00	1618401.00	39.33309900	-80.84922224		
14069.00	160.24	6314.84	6451.21	6451.21	5451.21	6510.50	-7432.50	-972.87	306372.00	306372.00	1618432.00	39.33284985	-80.84911081		
14164.00	161.19	6315.58	6451.80	6451.80	5451.80	6598.49	-7520.49	-942.00	306285.00	306285.00	1618463.00	39.33260070	-80.84900038		
14259.00	160.70	6316.32	6452.39	6452.39	5452.39	6686.48	-7608.48	-911.13	306198.00	306198.00	1618494.00	39.33235155	-80.84888895		
14354.00	161.13	6317.06	6452.98	6452.98	5452.98	6774.47	-7696.47	-880.26	306111.00	306111.00	1618525.00	39.33210240	-80.84877752		
14449.00	160.47	6317.80	6453.57	6453.57	5453.57	6862.46	-7784.46	-849.39	306024.00	306024.00	1618556.00	39.33185325	-80.84866609		
14544.00	160.24	6318.54	6454.16	6454.16	5454.16	6950.45	-7872.45	-818.52	305937.00	305937.00	1618587.00	39.33160410	-80.84855466		
14639.00	160.03	6319.28	6454.75	6454.75	5454.75	7038.44	-7960.44	-787.65	305850.00	305850.00	1618618.00	39.33135495	-80.84844323		
14734.00	160.24	6320.02	6455.34	6455.34	5455.34	7126.43	-8048.43	-756.78	305763.00	305763.00	1618649.00	39.33110580	-80.84833180		
14829.00	160.24	6320.76	6455.93	6455.93	5455.93	7214.42	-8136.42	-725.91	305676.00	305676.00	1618680.00	39.33085665	-80.84822037		
14924.00	160.70	6321.50	6456.52	6456.52	5456.52	7302.41	-8224.41	-695.04	305589.00	305589.00	1618711.00	39.33060750	-80.84810894		
15019.00	160.24	6322.24	6457.11	6457.11	5457.11	7390.40	-8312.40	-664.17	305502.00	305502.00	1618742.00	39.33035835	-80.84800051		
15114.00	160.24	6322.98	6457.70	6457.70	5457.70	7478.39	-8400.39	-633.30	305415.00	305415.00	1618773.00	39.33010920	-80.84788908		
15209.00	160.24	6323.72	6458.29	6458.29	5458.29	7566.38	-8488.38	-602.43	305328.00	305328.00	1618804.00	39.32986005	-80.84777765		
15304.00	1														

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (*100ft)	BR (*100ft)	TR (*100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (°)	Longitude (°)
	16552.00	89.88	160.78	6304.34	5447.34	9156.39	-9749.19	-189.37	0.34	-0.33	-0.07	303925.55	1619215.60	39.32662285	-80.84610201
	16646.00	89.84	160.97	6304.57	5447.57	9250.39	-9838.00	-158.56	0.20	-0.04	0.20	303836.75	1619246.41	39.32638032	-80.84598843
Deepest TVD	16739.00	90.10	161.35	6304.62	5447.62	9343.39	-9926.02	-128.53	0.50	0.28	0.42	303748.73	1619276.44	39.32613994	-80.84587763
	16926.00	90.11	160.98	6304.28	5447.28	9530.39	-10103.01	-68.17	0.20	0.00	-0.20	303571.75	1619336.80	39.32565656	-80.84565491
	17018.00	90.05	160.52	6304.16	5447.16	9622.39	-10189.86	-37.84	0.50	-0.07	-0.50	303484.90	1619367.12	39.32541937	-80.84554313
	17112.00	89.62	161.32	6304.43	5447.43	9716.38	-10278.70	-7.11	0.96	-0.46	0.85	303396.07	1619397.85	39.32517677	-80.84542982
	17205.00	90.20	161.52	6304.58	5447.58	9809.38	-10366.85	22.52	0.66	0.63	0.22	303307.92	1619427.48	39.32493600	-80.84532041
	17298.00	89.85	160.93	6304.54	5447.54	9902.38	-10454.90	52.46	0.74	-0.37	-0.63	303219.88	1619457.42	39.32469552	-80.84520995
	17392.00	90.36	161.54	6304.36	5447.36	9996.38	-10543.90	82.70	0.85	0.54	0.65	303130.88	1619487.65	39.32445244	-80.84509838
	17485.00	90.46	162.55	6303.70	5446.70	10089.36	-10632.37	111.36	1.09	0.11	1.08	303042.42	1619516.32	39.32421076	-80.84499238
	17580.00	90.45	161.98	6302.94	5445.94	10184.33	-10722.85	140.30	0.60	-0.01	-0.60	302951.94	1619545.25	39.32396356	-80.84488533
	17673.00	90.42	161.22	6302.22	5445.22	10277.32	-10811.09	169.65	0.82	-0.03	-0.82	302863.70	1619574.61	39.32372253	-80.84477691
	17767.00	90.70	160.81	6301.30	5444.30	10371.32	-10899.97	200.24	0.53	0.29	-0.43	302774.82	1619605.19	39.32347980	-80.84466413
	17861.00	90.23	161.22	6300.54	5443.54	10465.32	-10988.86	230.81	0.67	-0.50	0.44	302685.94	1619635.76	39.32323705	-80.84455136
	17954.00	90.17	161.39	6300.21	5443.21	10558.31	-11076.95	260.62	0.19	-0.07	0.18	302597.85	1619665.56	39.32299645	-80.84444137
	18047.00	91.23	160.57	6299.08	5442.08	10651.30	-11164.87	290.92	1.45	-0.89	-0.89	302509.95	1619695.87	39.32275635	-80.84432961
	18140.00	90.98	161.05	6297.28	5440.28	10744.29	-11252.68	321.49	0.58	-0.26	0.52	302422.14	1619726.44	39.32251655	-80.84421693
	18234.00	91.26	161.08	6295.44	5438.44	10838.27	-11341.57	351.99	0.30	0.29	0.03	302333.25	1619756.94	39.32227377	-80.84410442
	18327.00	90.58	161.26	6293.94	5436.94	10931.25	-11429.59	382.01	0.76	-0.73	0.20	302245.24	1619786.95	39.32203340	-80.84399370
	18421.00	90.91	161.35	6292.72	5435.72	11025.25	-11518.62	412.13	0.36	0.34	0.09	302156.21	1619817.07	39.32179023	-80.84388253
	18514.00	90.73	161.25	6291.39	5434.39	11118.23	-11606.70	441.94	0.22	-0.19	-0.10	302068.13	1619846.88	39.32154966	-80.84377251
	18608.00	90.45	160.69	6290.41	5433.41	11212.23	-11695.56	472.59	0.67	-0.29	-0.60	301979.28	1619877.53	39.32130698	-80.84365952
	18700.00	90.01	160.86	6290.04	5433.04	11304.23	-11782.43	502.88	0.52	-0.49	0.18	301892.41	1619907.82	39.32106976	-80.84354786
	18793.00	89.75	161.66	6290.24	5433.24	11397.23	-11870.50	532.76	0.90	-0.27	0.86	301804.35	1619937.70	39.32082923	-80.84343760
	18887.00	89.72	161.07	6290.67	5433.67	11491.22	-11959.57	562.80	0.62	-0.04	-0.62	301715.29	1619967.74	39.32058595	-80.84332673
	18980.00	90.11	161.46	6290.81	5433.81	11584.22	-12047.64	592.67	0.59	0.42	0.42	301627.22	1619997.61	39.32034541	-80.84321651
	19074.00	90.74	160.73	6290.11	5433.11	11678.22	-12136.56	623.13	1.03	0.67	-0.78	301538.30	1620028.06	39.32010255	-80.84310419
	19169.00	90.59	161.44	6289.01	5432.01	11773.21	-12226.43	653.92	0.76	-0.16	0.75	301448.44	1620058.85	39.31985712	-80.84299061
	19262.00	90.51	161.53	6288.11	5431.11	11866.20	-12314.61	683.45	0.13	-0.09	0.10	301360.26	1620088.38	39.31961626	-80.84288159
	19356.00	90.92	161.43	6286.94	5429.94	11960.19	-12403.73	713.31	0.45	0.44	-0.11	301271.14	1620118.23	39.31937282	-80.84277137
Final SLB_MWD	19449.00	90.11	160.45	6286.11	5429.11	12053.19	-12491.63	743.68	1.37	-0.87	-1.06	301183.25	1620148.60	39.31913278	-80.84265940
PTB	19477.00	90.11	160.45	6286.05	5429.05	12081.18	-12518.01	753.05	0.01	0.01	0.01	301156.87	1620157.97	39.31906074	-80.84262490

Survey Type: Def Survey

Survey Error Model: ISCWSA Rev 3 *** 3-D 95.000% Confidence 2.7955 sigma
 Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	1	0.000	29.000	1/98.425	17.500	13.375	A020Ga_GYRO-NS-Depth Only	Original Borehole / CNX SHR-37K-HMS Surveys 0ft to 19477ft MD
	1	29.000	29.000	Act Stns	17.500	13.375	A020Ga_GYRO-NS-Depth Only	Original Borehole / CNX SHR-37K-HMS Surveys 0ft to 19477ft MD
	1	29.000	422.000	Act Stns	17.500	13.375	A020Ga_GYRO-NS	Original Borehole / CNX SHR-37K-HMS Surveys 0ft to 19477ft MD
	1	422.000	5248.000	Act Stns	12.250	9.625	A001Mb_MWD	Original Borehole / CNX SHR-37K-HMS Surveys 0ft to 19477ft MD
	1	5248.000	19477.000	Act Stns	8.500	5.500	B006Mb_MWD+IGRF	Original Borehole / CNX SHR-37K-HMS Surveys 0ft to 19477ft MD

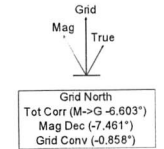
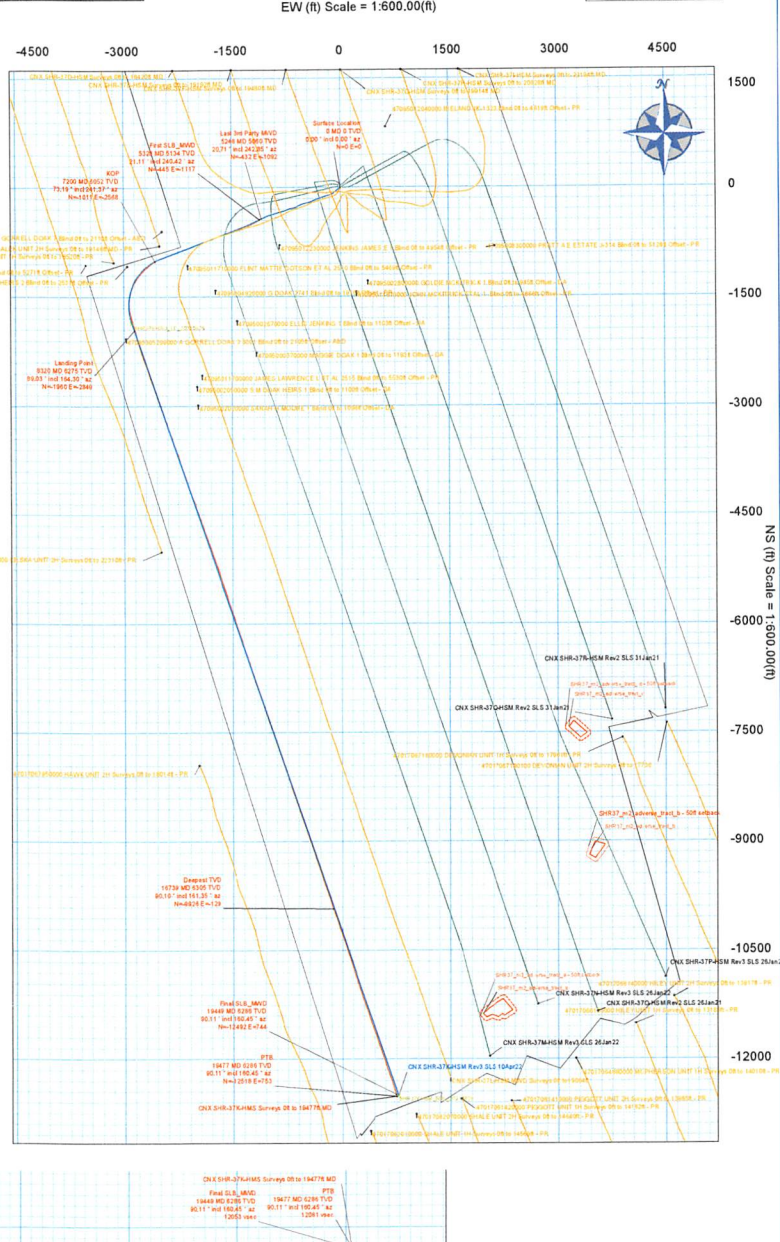
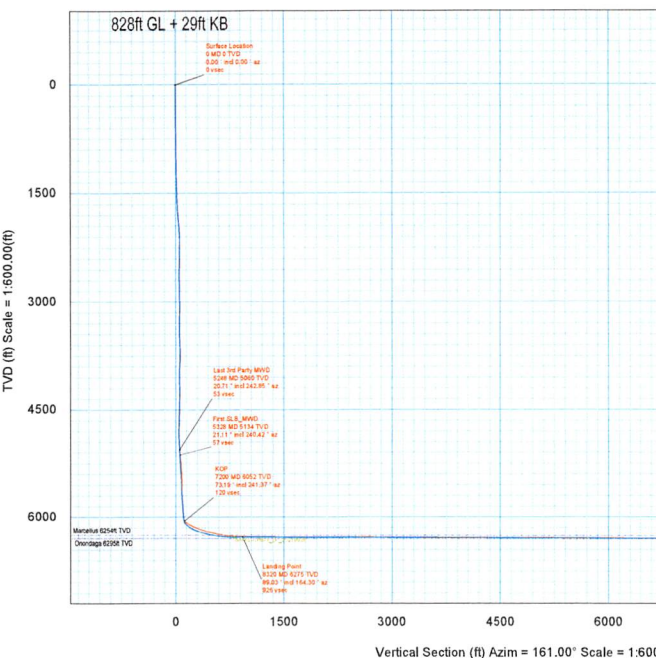
Borehole: Original Borehole	Well: SHR-37K-HSM	Field: WV Tyler County (NAD 27)	Structure: Patterson 873
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Gravity & Magnetic Parameters Model: HDOM 2022 MagDec: -7.461°	Dip: 66.19° FS: 1589.65nT	Date: 10-Apr-2022 Gravity FS: 999.338mgal (9.80665 Based)	Surface Location NAD27 West Virginia State Plane, Northern Zone, US Feet Lat: N 39 21 12.22 Lon: W 80 50 46.42	Northing: 313674.267US Easting: 161940.948US Grid Conv: -0.8694' Scale Fact: 0.999962	Miscellaneous Slot: SHR-37K-HSM Plan: CNX SHR-37K-HSM Surveys 01 to 19477R MD	TVD Ref: RKB(867R above MSL)
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Target Name	Shape	Dimension	Latitude	Longitude	Height	Grid Coord	True	Local Coord
SHR37_m2_abrvns_fm_1 - 50R setback	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_3 - 50R setback	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_2 (30x30)	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_3	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_4	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_5	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_6	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_7	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_8	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_9	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_10	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_11	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_12	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_13	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_14	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_15	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_16	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_17	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_18	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_19	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_20	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_21	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_22	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_23	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_24	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_25	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_26	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_27	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_28	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_29	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_30	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_31	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_32	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_33	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_34	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_35	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_36	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_37	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_38	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_39	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_40	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_41	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_42	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_43	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_44	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_45	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_46	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_47	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_48	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_49	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13
SHR37_m2_abrvns_fm_50	Polygon	N/A	N 39 21 12.38	W 80 50 45.57	313680.44	161938.21	857.20	-18.13

PART	Seq.	Survey Tool	Vendor/Tool	Head Size (in)	Casing Size (in)	Expected (in)	MD From (ft)	MD To (ft)	Survey Frequency (ft)	ESU Size (ft/min Major)	ESU Size (ft/min Minor)	Comments/Contingency
1	1	AD200A_OYDAS-Depth Only		17.5	13.375		0	29	188.475	0.731	0.70	
1	2	AD200A_OYDAS-Depth Only		17.5	13.375		29	29	Ad Stn	0.731	0.70	
1	3	AD200A_OYDAS		17.5	13.375		29	422	Ad Stn	2.479	2.475	
1	4	AD01M_MVD		12.25	9.625		422	5340	Ad Stn	34.509	25.891	
1	5	BD04M_MVD-HDRF		8.5	5.5		5348	19477	Ad Stn	351.861	79.52	

Critical Point	MD	INCL	AZIM	TVD	WVEC	NWVSL	EWVSL	DLS
Surface Location	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Last Set Point MVD	5248.00	20.71	242.85	5059.83	52.00	-431.87	-1062.10	1.34
First SLS_MVD	5328.00	21.11	240.42	5134.26	57.25	-440.34	-1117.21	1.19
KOP	7200.00	73.19	341.37	8051.82	120.24	-1011.26	-2667.59	8.85
Mandrel	8963.12	81.85	188.58	8254.00	670.13	-1714.31	-2020.37	6.20
Landing Point	8320.00	89.63	184.30	8274.72	925.51	-1958.98	-2044.44	4.20
Deepset TVD	14739.00	96.10	181.35	8304.82	1343.39	-4926.92	-128.53	0.50
Final SLS_MVD	19449.00	96.11	180.45	8298.11	1205.19	-12891.63	743.89	1.27
PTS	19477.00	96.11	180.45	8298.05	1209.18	-12818.01	753.05	0.01



CONTROLLED

Plan of: CNX SHR-37K-HSM Surveys 01 to 19477R MD

Drawn by: [Signature]

Copy number: 3

Date: 19-Apr-2022

Drawn By: S. Shannon

Copy number: [Blank]

03/17/2023