



STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/15/23 19:03 - C:\P\WORKING\ENGINEAST01\120230215\_ATH-690-4.21\_10X\_BORING LOGS.GPJ

MATERIAL DESCRIPTION AND NOTES	ELEV. 633.2	DEPTHS	SPT/ RQD	N <sub>60</sub>	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	HOLE SEALED
								GR	CS	FS	SI	CL	LL	PL	PI			
<p><b>SHALE</b> RED-BROWN AND GRAY, HIGHLY WEATHERED, VERY WEAK, VERY THIN TO THIN BEDDED, FRIABLE, JOINT AND BEDDING DISCONTINUITIES, FRACTURED TO MODERATELY FRACTURED, TIGHT APERTURE, SLICKENSIDED, LAMINATED, VERY POOR TO POOR SURFACE CONDITIONS; RQD 54%, REC 83%. <i>(continued)</i>                      @ 33.0' - 34.0' : Highly Fractured, Calcareous                      @ 33.0' - 34.9' : Transition to Brownish Gray then Gray</p>	628.3	31 32 33 34	48		77	NQ2-1										CORE		
<p><b>LIMESTONE</b> GRAY, SLIGHTLY WEATHERED, STRONG, THICK BEDDED, CRYSTALLINE, BEDDING DISCONTINUITIES, SLIGHTLY FRACTURED, TIGHT APERTURE, ROUGH SURFACE, BLOCKY, GOOD SURFACE CONDITIONS; RQD 100%, REC 100%.</p>	626.5 625.3	35 36 37	92		100	NQ2-2										CORE		
<p><b>SHALE</b> GRAY, MODERATELY TO HIGHLY WEATHERED, VERY WEAK, MEDIUM BEDDED, BEDDING DISCONTINUITIES, MODERATELY FRACTURED, TIGHT APERTURE, LAMINATED, SLICKENSIDED, POOR SURFACE CONDITIONS; RQD 100%, REC 100%.</p>	613.7	38 39 40 41 42 43 44 45 46 47 48 49	94		100	NQ2-3										CORE		
<p><b>SANDSTONE</b> GRAY, UNWEATHERED TO SLIGHTLY WEATHERED, MODERATELY STRONG, FINE TO MEDIUM GRAINED, THICK TO VERY THICK BEDDED, JOINT AND BEDDING DISCONTINUITIES, SLIGHTLY FRACTURED TO INTACT, TIGHT TO OPEN APERTURE, SLIGHTY ROUGH, BLOCKY, VERY GOOD SURFACE CONDITIONS; RQD 96%, REC 100%.                      @ 43.9' - 44.3' : Qu = 5983 psi</p> <p>@ 48.5' - 49.5' : Dark Gray, Carbonaceous</p>	613.7	41 42 43 44 45 46 47 48 49	97		100	NQ2-4										CORE		
		EOB																

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: TREMIED 20 LB. BENTONITE POWDER; 94 LB. CEMENT; 50 GAL. WATER

PROJECT: ATH-690-04.21	DRILLING FIRM / OPERATOR: CENTRAL STAR / TS	DRILL RIG: DIEDRICH D-50 (SN 481)	STATION / OFFSET: 235+87, 7' LT.	EXPLORATION ID: B-002-0-23
TYPE: LANDSLIDE	SAMPLING FIRM / LOGGER: HDR / DM	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: SR 690	PAGE: 1 OF 2
PID: 114592 SFN:	DRILLING METHOD: 2.25 HSA / NQ2	CALIBRATION DATE: 3/7/22	ELEVATION: 667.4 (MSL) EOB: 44.8 ft.	
START: 1/10/23 END: 1/11/23	SAMPLING METHOD: SPT / NQ2	ENERGY RATIO (%): 86.8	LAT / LONG: 39.375334, -81.989969	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/RQD	N <sub>60</sub>	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	HOLE SEALED		
								GR	CS	FS	SI	CL	LL	PL	PI					
42 inches of Asphalt	667.4																			
	663.4	1																		
	662.9	2																		
MEDIUM DENSE, LIGHT BROWN, GRAVEL WITH SAND LITTLE SILT, TRACE CLAY, DAMP	662.9	3	16	6	16	78	SS-1	-	-	-	-	-	-	-	-	8	A-1-b (V)			
STIFF TO VERY STIFF, BROWN AND GRAY, CLAY, SOME SAND, SOME SILT, DAMP		4	2	1	4	67	SS-2	1.00	-	-	-	-	-	-	-	18	A-7-6 (V)			
		5	3	4	7	16	100	SS-3	1.50	0	0	1	21	78	60	28	32	28	A-7-6 (20)	
		6	5	8	14	32	78	SS-4	3.00	-	-	-	-	-	-	-	-	-	25	A-7-6 (V)
@ 9.0' - Auger Grinding Prior to SPT Sampling	658.4	7	6	12	18	43	83	SS-5	3.50	-	-	-	-	-	-	-	-	-	18	A-7-6 (V)
VERY STIFF TO HARD, LIGHT BROWN TRACE RED-BROWN AND GRAY, CLAY, SOME SILT, LITTLE SAND, LITTLE STONE FRAGMENTS, DAMP		8	9	17	16	48	100	SS-6	4.00	14	12	7	29	38	46	25	21	13	A-7-6 (12)	
HARD, RED-BROWN, SILTY CLAY, SOME SAND, TRACE STONE FRAGMENTS, DAMP (Colluvium)	655.4	9	9	12	17	42	56	SS-7	4.50	-	-	-	-	-	-	-	-	-	19	A-6b (V)
		10	11	40	50/5"	-	94	SS-8	4.50	8	10	11	40	31	38	22	16	9	A-6b (10)	
HARD, RED-BROWN, GRAY AND LIGHT BROWN, SILTY CLAY, TRACE SAND, DAMP (Possible Colluvium)	652.4	11	35	28	40	98	89	SS-9	4.50	-	-	-	-	-	-	-	-	-	10	A-6b (V)
		12	22	26	30	81	100	SS-10	4.50	0	1	5	46	48	40	22	18	10	A-6b (11)	
HARD, RED-BROWN, GRAY AND LIGHT BROWN, CLAY, "AND" SILT, TRACE SAND, TRACE STONE FRAGMENTS, (RELIC ROCK STRUCTURE), DAMP (Residuum)	649.4	13	27	50/5"	-	91		SS-11	4.50	-	-	-	-	-	-	-	-	-	11	A-7-6 (V)
		14	18	31	31	90	100	SS-12	4.50	3	2	5	49	41	44	23	21	11	A-7-6 (13)	
SHALE GRAY TO BROWN-GRAY, MODERATELY TO HIGHLY WEATHERED, VERY WEAK.	646.4	15	26	43	50/4"	-	100	SS-13	-	-	-	-	-	-	-	-	-	-	9	Rock (V)
SHALE GRAY, MODERATELY WEATHERED, VERY WEAK.	644.9	16	47	50/3"	-	100		SS-14	-	-	-	-	-	-	-	-	-	-	6	Rock (V)
@ 24.0' - 24.5' : Gray and Red-Brown		17	50/6"	-	102			SS-15	-	-	-	-	-	-	-	-	-	-	7	Rock (V)
SHALE RED-BROWN AND GRAY, MODERATELY TO HIGHLY WEATHERED, WEAK, MEDIUM BEDDED, JOINT AND BEDDING DISCONTINUITIES, FRACTURED TO SLIGHTLY FRACTURED, NARROW TO OPEN APERTURE, SLICKENSIDED TO SLIGHTLY ROUGH, BLOCKY, FAIR SURFACE CONDITION; RQD 34%, REC 97%.	641.4	18																		
@ 28.2' - 29.1' : Gray		19	27			100		NQ2-1												CORE

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/15/23 19:03 - C:\P\WORKING\ENGINE\AST01D3021581120230215 ATH-690-04.21 - 10X BORING LOGS.GPJ



STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/15/23 19:03 - C:\P\WORKING\ING\EAST01D3021581120230215 - ATH-690-4.21 - 10X BORING LOGS.GPJ

PROJECT: ATH-690-04.21		DRILLING FIRM / OPERATOR: CENTRAL STAR / TS		DRILL RIG: DIEDRICH D-50 (SN 481)		STATION / OFFSET: 237+03, 4' LT.		EXPLORATION ID: B-003-0-23											
TYPE: LANDSLIDE		SAMPLING FIRM / LOGGER: HDR / DM		HAMMER: AUTOMATIC HAMMER		ALIGNMENT: SR 690		PAGE 1 OF 2											
PID: 114592 SFN:		DRILLING METHOD: 2.25 HSA / NQ2		CALIBRATION DATE: 3/7/22		ELEVATION: 671.4 (MSL) EOB: 50.0 ft.													
START: 1/10/23 END: 1/10/23		SAMPLING METHOD: SPT / ST / NQ2		ENERGY RATIO (%): 86.8		LAT / LONG: 39.375569, -81.990250													
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTH	SPT/RQD	N <sub>60</sub>	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	HOLE SEALED
									GR	CS	FS	SI	CL	LL	PL	PI			
24 inches of Asphalt		671.4																	
DENSE, LIGHT BROWN, GRAVEL WITH SAND LITTLE SILT, TRACE CLAY, DAMP		669.4	1	16															
STIFF TO VERY STIFF, ORANGE-BROWN MOTTLED GRAY, SILTY CLAY, TRACE SAND, DARK BROWN CONCRETION NODULES, DAMP		668.9	2	13	35	67	SS-1	-	0	52	26	14	8	NP	NP	NP	6	A-1-b (0)	
			3	5															
			4	4	13	78	SS-2	1.50	-	-	-	-	-	-	-	-	20	A-6b (V)	
			5	4															
			6	5	14	100	SS-3	2.00	0	3	5	53	39	40	22	18	21	A-6b (11)	
		663.4	7	4															
VERY STIFF, LIGHT ORANGE-BROWN MOTTLED GRAY, CLAY, "AND" SILT, TRACE SAND, TRACE STONE FRAGMENTS, DAMP			8	6	19	67	SS-4	2.50	-	-	-	-	-	-	-	-	24	A-7-6 (V)	
			9	7															
			10																
@11.8' - 12.3' : Qu = 1889 psf			11			100	ST-5	4.00	1	1	6	44	48	56	28	28	23	A-7-6 (18)	
			12	5															
			13	9	30	78	SS-6	2.50	-	-	-	-	-	-	-	-	20	A-7-6 (V)	
		657.4	14	12															
HARD, RED-BROWN, CLAY, "AND" SILT, LITTLE SAND, (RELIC ROCK STRUCTURE), DAMP			15	17															
			16	16	56	100	SS-7	4.00	0	3	8	42	47	42	23	19	11	A-7-6 (12)	
		653.9	17	23															
HARD, LIGHT BROWN TO OLIVE, CLAY, "AND" SILT, TRACE SAND, NOTED MICA (RELIC ROCK STRUCTURE), DAMP			18	16	74	100	SS-8	4.00	0	3	4	49	44	47	24	23	12	A-7-6 (15)	
			19	17															
		651.4	20	34															
SHALE RED-BROWN, LIGHT-BROWN AND OLIVE, HIGHLY WEATHERED, VERY WEAK.			21	22	113	100	SS-9	-	-	-	-	-	-	-	-	-	11	Rock (V)	
			22	33															
			23	45															
			24	25	111	100	SS-10	-	-	-	-	-	-	-	-	-	11	Rock (V)	
			25	32															
			26	45															
			27	18	-	100	SS-11	-	-	-	-	-	-	-	-	-	10	Rock (V)	
			28	50/5"															
@ 27.5' : Red-Brown and Gray			29	50/5"	-	100	SS-12	-	-	-	-	-	-	-	-	-	9	Rock (V)	

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PID: 114592		SFN:		PROJECT: ATH-690-04.21		STATION / OFFSET: 237+03, 4' LT.		START: 1/10/23		END: 1/10/23		PG 2 OF 2		B-003-0-23						
MATERIAL DESCRIPTION AND NOTES			ELEV.	DEPTHS	SPT/RQD	N <sub>60</sub>	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	HOLE SEALED
										GR	CS	FS	SI	CL	LL	PL	PI			
<p><b>SHALE</b> RED-BROWN AND DARK GRAY, MODERATELY WEATHERED, VERY WEAK, THIN TO MEDIUM BEDDED, JOINT AND BEDDING DISCONTINUITIES, MODERATELY TO SLIGHTLY FRACTURED, NARROW APERTURE, SLIGHTLY ROUGH, BLOCKY, FAIR SURFACE CONDITIONS; RQD 60%, REC 100%. @ 32.9' - 33.3' : Qu = 457 psi</p>			641.4		50/4"	-	100	SS-13	-	-	-	-	-	-	-	6	Rock (V)			
			640.9	31																
				32		75		100	NQ2-1										CORE	
				33																
				34																
<p><b>LIMESTONE</b> GRAY, SLIGHTLY WEATHERED, STRONG, THICK BEDDED, CRYSTALLINE, BEDDING DISCONTINUITIES, SLIGHT FRACTURE, TIGHT APERTURE, ROUGH, BLOCKY, GOOD SURFACE CONDITIONS; RQD 100%, REC 100%.</p>			633.9	35																
				36																
				37																
				38																
				39																
<p><b>SHALE</b> GRAY, MODERATELY TO HIGHLY WEATHERED, VERY WEAK, MEDIUM BEDDED, BEDDING DISCONTINUITIES, MODERATELY FRACTURED, TIGHT APERTURE, LAMINATED, SLICKENSIDED, POOR SURFACE CONDITIONS; RQD 100%, REC 100%.</p>			632.0	40																
				41																
				42																
				43																
				44																
<p><b>SANDSTONE</b> GRAY, UNWEATHERED TO SLIGHTLY WEATHERED, SLIGHTLY STRONG, FINE TO MEDIUM GRAINED, THICK TO VERY THICK BEDDED, JOINT AND BEDDING DISCONTINUITIES, SLIGHTLY FRACTURED TO INTACT, TIGHT TO NARROW APERTURE, SLIGHTLY ROUGH, BLOCKY, VERY GOOD SURFACE CONDITIONS; RQD 94%, REC 100%.</p>			631.1	45																
				46																
				47																
				48		100		100	NQ2-3										CORE	
				49																
			621.4	50																
					EOB															

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: TREMIED 20 LB. BENTONITE POWDER; 94 LB. CEMENT; 50 GAL. WATER