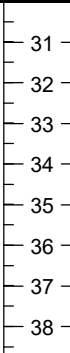


CINCINNATI OH GEOIPROJ - 11/24/25 15:50 - T:\CINCINNATI-1178\PROJECTS\2024\24780173 STANTEC HAM-275-11 40 LANDSLIDE STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT -

S&ME JOB: 24780173



PROJECT: <u>HAM-I-275-</u>		DRILLING FIRM / OPERATOR: <u>S&ME / J. BEANE</u>				DRILL RIG: <u>S&ME D50 TRACK</u>		STATION / OFFSET: <u>437+13, 73' RT.</u>				EXPLORATION ID <u>B-001-0-24</u>										
TYPE: _____		SAMPLING FIRM / LOGGER: <u>S&ME / S. MARAHATTA</u>				HAMMER: <u>CME AUTOMATIC</u>		ALIGNMENT: <u>I-275</u>				PAGE 1 OF 2										
PID: <u>121506</u> SFN: _____		DRILLING METHOD: <u>3.25" HSA / NQ2</u>				CALIBRATION DATE: <u>8/29/23</u>		ELEVATION: <u>633.7 (MSL)</u> EOB: <u>38.8 ft.</u>														
START: <u>5/21/25</u> END: <u>5/24/25</u>		SAMPLING METHOD: <u>SPT</u>				ENERGY RATIO (%): <u>87.5</u>		LAT / LONG: <u>39.219255, -84.668372</u>														
MATERIAL DESCRIPTION AND NOTES			ELEV. 633.7	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL	
VERY STIFF, BROWN, CLAY , SOME SILT, TRACE FINE TO COARSE SAND, LITTLE ROCK FRAGMENTS, FILL, MOIST			630.7	1	8 8	23	56	SS-1	3.3	20	3	2	32	43	41	18	23	16	A-7-6 (13)	-		
				2	4 6	19	33	SS-2	3.0	-	-	-	-	-	-	-	-	17	A-7-6 (V)	-		
				3	4 4	13	22	SS-3	2.5	25	5	3	26	41	32	22	10	16	A-4a (6)	-		
VERY STIFF, BROWN, SANDY SILT , "AND" CLAY, SOME ROCK FRAGMENTS, FILL, MOIST			629.2	4	4 5	13	22	SS-3	2.5	25	5	3	26	41	32	22	10	16	A-4a (6)	-		
VERY STIFF TO HARD, BROWN, CLAY , "AND" SILT, TRACE FINE TO COARSE SAND, TRACE GRAVEL, FILL, MOIST			623.2	5	6 5	13	56	SS-4	3.3	-	-	-	-	-	-	-	-	20	A-7-6 (V)	-		
				6	6 4	23	78	SS-5	4.5	1	3	2	36	58	43	18	25	20	A-7-6 (15)	-		
				7	8 8	29	67	SS-6	4.5	-	-	-	-	-	-	-	-	19	A-7-6 (V)	-		
@7.5'; LITTLE ROCK FRAGMENTS, FILL			621.7	8	8 12	32	56	SS-7	4.5	-	-	-	-	-	-	-	-	27	A-7-6 (V)	-		
				9	9 11	29	72	SS-8	4.0	17	9	5	26	43	35	17	18	16	A-6b (10)	-		
				10	15 11	28	50	SS-9	3.3	-	-	-	-	-	-	-	-	22	A-6b (V)	-		
VERY STIFF, BROWN, SILTY CLAY , SOME SILT, LITTLE ROCK FRAGMENTS, LITTLE FINE TO COARSE SAND, FILL, MOIST			620.2	11	9 10	0	0	SS-10	-	-	-	-	-	-	-	-	-	-	A-2-6 (V)	-		
				12	7 10	100	100	SS-11	-	-	-	-	-	-	-	-	-	13	A-2-6 (V)	-		
				13	9 10	100	100	SS-12	-	-	-	-	-	-	-	-	-	18	A-7-6 (V)	-		
VERY DENSE, BROWN, GRAVEL AND/OR STONE FRAGMENTS WITH SAND, SILT, AND CLAY , COBBLES AND BOULDERS, FILL, MOIST			617.2	14	50/2"	0	0	SS-10	-	-	-	-	-	-	-	-	-	-	A-2-6 (V)	-		
				15	50/1"	100	100	SS-11	-	-	-	-	-	-	-	-	-	13	A-2-6 (V)	-		
				16	50/1"	100	100	SS-12	-	-	-	-	-	-	-	-	-	18	A-7-6 (V)	-		
HARD, BROWN, CLAY , LITTLE FINE TO COARSE SAND, FILL, MOIST			615.7	17	50/1"	100	100	SS-12	-	-	-	-	-	-	-	-	-	18	A-7-6 (V)	-		
VERY STIFF, BROWN, SILTY CLAY , TRACE ROCK FRAGMENTS, TRACE FINE TO COARSE SAND, FILL, MOIST			612.7	18	6 4	16	67	SS-13	2.8	8	7	3	34	48	38	20	18	19	A-6b (11)	-		
				19	5 7	18	33	SS-14	3.3	-	-	-	-	-	-	-	-	20	A-6b (V)	-		
				20	27 5	31	0	SS-15	-	-	-	-	-	-	-	-	-	-	A-7-6 (V)	-		
HARD, BROWN, CLAY , TRACE FINE TO COARSE SAND, FILL, MOIST			611.2	21	9 12	0	0	SS-16	-	-	-	-	-	-	-	-	-	-	A-7-6 (V)	-		
HARD, BROWN & GRAY, CLAY , SOME SILT, TRACE FINE TO COARSE SAND, TRACE ROCK FRAGMENTS, FILL, MOIST			606.7	22	50/1"	0	0	SS-16	-	-	-	-	-	-	-	-	-	-	-	A-7-6 (V)		-
				23	46 31	54	33	SS-17	4.5	3	2	3	35	57	43	20	23	18	A-7-6 (14)	-		
				24	7 10	29	44	SS-18	4.5	-	-	-	-	-	-	-	-	21	A-7-6 (V)	-		
HARD, GRAY, CLAY , LITTLE LIMESTONE FRAGMENTS, HIGHLY WEATHERED SHALE FRAGMENTS			604.9	25	10 10	0	0	SS-19	-	-	-	-	-	-	-	-	-	5	A-7-6 (V)	-		
				26	50/2"	100	100	SS-19	-	-	-	-	-	-	-	-	-	5	A-7-6 (V)	-		
				27	50/4"	100	100	SS-20	-	-	-	-	-	-	-	-	-	6	A-7-6 (V)	-		
				28																		
				29																		

PID: 121506		SFN:		PROJECT: HAM-I-275-		STATION / OFFSET: 437+13, 73' RT.				START: 5/21/25		END: 5/24/25		PG 2 OF 2		B-001-0-24								
MATERIAL DESCRIPTION AND NOTES				ELEV. 603.7	DEPTHS		SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL	
INTERBEDDED SHALE (90%) AND LIMESTONE (10%), RQD 45%, REC. 68%; SHALE , SHALE : DARK GRAY, HIGHLY WEATHERED, VERY WEAK, MODERATELY FRACTURED, 45° FRACTURED AT 29.0 FEET QU = 137 PSI; LIMESTONE , LIGHT GRAY, MODERATELY WEATHERED, VERY STRONG. <i>(continued)</i>					594.9	EOB		45	68	NQ-1														

STANDARD ODOT LOG W/SULFATES (8.5 X 11) - OH DOT.GDT - 11/24/25 15:50 - T:\CINCINNATI-1178\PROJECTS\2024\24780173 STANTEC HAM-275-11.40 LANDSLIDE CINCINNATI OH\GEO\PROJECT

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 11/24/25 15:50 - T:\CINCINNATI-1178\PROJECTS\2024\24780173 STANTEC HAM-275-11.40 LANDSLIDE CINCINNATI OH\GEO\PROJECTS

STANDARD QDOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 11/24/25 15:50 - T:\CINCINNATI-178\PROJECTS\2024\24780173 STANTEC HAM-275-11.40 LANDSLIDE CINCINNATI OH\GEO\PROJ\

PID: 121506		SFN:		PROJECT: HAM-I-275-		STATION / OFFSET: 438+72, 127' RT.				START: 5/19/25		END: 5/21/25		PG 2 OF 2		B-002-1-24								
MATERIAL DESCRIPTION AND NOTES				ELEV. 584.3	DEPTHS		SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	SO4 ppm	BACK FILL	
												GR	CS	FS	SI	CL	LL	PL	PI					
INTERBEDDED SHALE (90%) AND LIMESTONE (10%), RQD 46%, REC. 96%; SHALE, SHALE: DARK GRAY, HIGHLY WEATHERED, VERY WEAK, ARGILLACEOUS, MODERATELY FRACTURED QU = 113 PSI; LIMESTONE, LIGHT GRAY, MODERATELY WEATHERED, STRONG, FOSSILIFEROUS. (continued)				575.6	EOB	31	46	96	NQ-1															
						32																		
						33																		
						34																		
						35																		
						36																		
						37																		
38																								

NOTES: LOCATION COORDINATES AND ELEVATION WERE OBTAINED FROM STANTEC SURVEY. GROUNDWATER NOT ENCOUNTERED PRIOR TO ROCK CORING.

ABANDONMENT METHODS. MATERIALS. QUANTITIES: BENTONITE AND CEMENT GROUT MIXTURE

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 11/24/25 15:50 - T:\CINCINNATI-1178\PROJECTS\2024\24780173 STANTEC HAM-275-11 40 LANDSLIDE CINCINNATI OH GEOIPROJ

S&ME JOB: 24780173



PROJECT: HAM-I-275- TYPE: PID: 121506 SFN: START: 5/12/25 END: 5/12/25		DRILLING FIRM / OPERATOR: S&ME / J. BEANE SAMPLING FIRM / LOGGER: S&ME / S. MARAHATTA DRILLING METHOD: 3.25" HSA / NQ2 SAMPLING METHOD: SPT				DRILL RIG: S&ME D50 TRACK HAMMER: CME AUTOMATIC CALIBRATION DATE: 8/29/23 ENERGY RATIO (%): 87.5				STATION / OFFSET: 439+02, 75' RT. ALIGNMENT: I-275 ELEVATION: 598.4 (MSL) EOB: 29.2 ft. LAT / LONG: 39.219720, -84.668236				EXPLORATION ID B-002-2-24		PAGE 1 OF 1					
MATERIAL DESCRIPTION AND NOTES		ELEV. 598.4	DEPTHS		SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	SO4 ppm	BACK FILL
VERY STIFF, BROWN, CLAY , SOME SILT, LITTLE FINE TO COARSE SAND, TRACE ROCK FRAGMENTS, FILL, MOIST		593.9		1	8 3 3	9	44	SS-1	4.0	-	-	-	-	-	-	-	15	A-7-6 (V)	-		
				2	4 7 8	22	100	SS-2	3.0	7	7	4	25	57	45	19	26	19	A-7-6 (15)		-
				3	4 8 8	23	44	SS-3	2.5	-	-	-	-	-	-	-	-	11	A-7-6 (V)		-
				4	11 13 36	71	28	SS-4	1.5	40	13	5	15	27	37	20	17	14	A-6b (3)		-
STIFF, BROWN, SILTY CLAY , LITTLE SILT, LITTLE FINE TO COARSE SAND, AND ROCK FRAGMENTS, FILL, MOIST		592.4		6	28 38 17	80	22	SS-5	-	-	-	-	-	-	-	-	9	A-2-6 (V)	-		
VERY DENSE, GRAY AND BROWN, GRAVEL AND/OR STONE FRAGMENTS WITH SAND, SILT, AND CLAY , FILL, DRY		590.9	7	17 17 19	53	56	SS-6	3.5	31	14	15	11	29	37	19	18	13	A-6b (3)	-		
			8	15 22 17	57	28	SS-7	-	-	-	-	-	-	-	-	15	A-6b (V)	-			
			9	10 14 19	48	50	SS-8	4.5	-	-	-	-	-	-	-	20	A-7-6 (V)	-			
HARD TO VERY STIFF, BROWN, CLAY , LITTLE ROCK FRAGMENTS, TRACE FINE TO COARSE SAND, FILL, MOIST		584.9		12	19 19 23	61	61	SS-9	3.5	-	-	-	-	-	-	-	25	A-7-6 (V)	-		
HARD, BROWN, CLAY , SOME SILT, LITTLE FINE TO COARSE SAND, LITTLE ROCK FRAGMENTS, FILL, MOIST		583.4	13	12 18 50/3"	-	100	SS-10	4.5	11	4	3	27	55	46	23	23	16	A-7-6 (14)	-		
			14	25 50 50/0"	-	75	SS-11	4.5	-	-	-	-	-	-	-	10	A-7-6 (V)	-			
HARD, GRAY, CLAY , AND SHALE FRAGMENTS, LITTLE SANDSTONE FRAGMENTS, FILL, DRY		581.9		15	50/2"	-	100	SS-12	-	-	-	-	-	-	-	-	14	A-7-6 (V)	-		
HARD, BROWN AND GRAY, CLAY , AND SHALE FRAGMENTS, LITTLE SANDSTONE FRAGMENTS, FILL, DRY		579.2		16																	
INTERBEDDED SHALE (80%) AND LIMESTONE (20%), RQD 38%, REC. 80%; SHALE, SHALE: DARK GRAY, HIGHLY WEATHERED, VERY WEAK, THINLY LAMINATED, MODERATELY FRACTURED (ALONG CLAY SEAMS) QU = 157 PSI; LIMESTONE, LIGHT GRAY, MODERATELY WEATHERED, VERY STRONG, THIN BEDDED, FOSSILIFEROUS.		569.2	TR	17																	
				18																	
				19																	
				20																	
				21																	
				22																	
				23																	
				24																	
				25																	
				26																	
				27																	
				28																	
				29																	
		EOB																			
NOTES: LOCATION COORDINATES AND ELEVATION WERE OBTAINED FROM STANTEC SURVEY. GROUNDWATER NOT ENCOUNTERED PRIOR TO ROCK CORING.																					
ABANDONMENT METHODS, MATERIALS, QUANTITIES: BENTONITE AND CEMENT GROUT MIXTURE																					

STANDARD QDOT LOG W/ SULFATES (8.5 X 11) - QH DOT.GDT - 11/24/25 15:50 - I:\CINCINNATI\1178\PROJECTS\2024\24780173 STANTEC HAM-275-11.40 LANDSLIDE CINCINNATI OH\GEO\PROJECTS\

STANDARD ODOT LOG W/ SULFATES (8.5 X 11) - OH DOT.GDT - 11/24/25 15:50 - T:\CINCINNATI-1178\PROJECTS\2024\24780173 STANTEC HAM-275-11.40 LANDSLIDE CINCINNATI OH\GEO\PROJECTS\

Geohazard Exploration Report
HAM-275-11.40 Landslide (PID: 121506)

Hamilton County, Ohio
S&ME Project No. 24780173



 A photograph of a wooden sample box labeled 'HAM-275-1140 B-001-0-24 28.8' to 38.8' Box 1 of 1'. The box contains several cylindrical soil samples arranged in rows. A measuring tape is visible across the top of the box.		Date: 5/28/2025
Photographer: Suman Marahatta, EI		
13	Location / Orientation	B-001-0-24
	Remarks	28.8 feet to 38.8 feet

 A photograph of a wooden sample box labeled 'HAM-275-1140 B-002-0-24 36.0' to 46.0' Box 1 of 1'. The box contains several cylindrical soil samples arranged in rows. A measuring tape is visible across the top of the box.		Date: 5/28/2025
Photographer: Suman Marahatta, EI		
14	Location / Orientation	B-002-0-24
	Remarks	36 feet to 46 feet

Geohazard Exploration Report
HAM-275-11.40 Landslide (PID: 121506)

Hamilton County, Ohio
S&ME Project No. 24780173



			Date: 5/28/2025
Photographer: Suman Marahatta, EI			
15	Location / Orientation	B-002-1-24	
	Remarks	28.7 feet to 38.7 feet	

16	 A photograph of a wooden box containing soil samples. A white label inside the box reads: "HAM-275-11.40", "B-002-2-24", "19.2' to 29.4'", and "Box 1 of 1". A yellow measuring tape is placed across the top of the box, showing a length of approximately 30 inches. The box is filled with several long, cylindrical soil samples.		Date: 5/28/2025
	Photographer: Suman Marahatta, EI		
	Location / Orientation	B-002-2-24	
	Remarks	19.2 feet to 29.4 feet	

Geohazard Exploration Report
HAM-275-11.40 Landslide (PID: 121506)

Hamilton County, Ohio
S&ME Project No. 24780173



			Date: 5/28/2025
			Photographer: Suman Marahatta, EI
17	Location / Orientation	B-003-0-24	
	Remarks	33.5 feet to 43.5 feet	

SUMMARY OF LABORATORY TEST RESULTS



BORING	S A M P L E (#)	Top Depth (ft)	MC %	LL %	PL %	PI %	A G G R E G A T E %	C O A R S E S A N D %	F I N E S A N D %	S I L T %	C L A Y %	S I L T / C L A Y %	D / 50 m m	D / 95 m m	H R B ODOT CLASSIFICATION
B-001-0-24		0.00	16	41	18	23	20	3	2	32	43		0.0083	19.8609	A-7-6 (13)
B-001-0-24		1.50	17												A-7-6 (V)
B-001-0-24		3.00	16	32	22	10	25	5	3	26	41		0.0128	21.9568	A-4a (6)
B-001-0-24		4.50	20												A-7-6 (V)
B-001-0-24		6.00	20	43	18	25	1	3	2	36	58			0.1814	A-7-6 (15)
B-001-0-24		7.50	19												A-7-6 (V)
B-001-0-24		9.00	27												A-7-6 (V)
B-001-0-24		10.50	16	35	17	18	17	9	5	26	43		0.0105	14.3705	A-6b (10)
B-001-0-24		12.00	22												A-7-6 (V)
B-001-0-24		13.50													A-2-6 (V)
B-001-0-24		15.00	13												A-2-6 (V)
B-001-0-24		16.50	18												A-7-6 (V)
B-001-0-24		18.00	19	38	20	18	8	7	3	34	48		0.0059	4.8098	A-6b (11)
B-001-0-24		19.50	20												A-7-6 (V)
B-001-0-24		21.00													A-7-6 (V)
B-001-0-24		22.50													A-7-6 (V)
B-001-0-24		24.00	18	43	20	23	3	2	3	35	57			0.4250	A-7-6 (14)
B-001-0-24		25.50	21												A-7-6 (V)
B-001-0-24		27.00	5												A-7-6 (V)
B-001-0-24		28.50	6												A-7-6 (V)
B-002-0-24		0.00	17												A-7-6 (V)
B-002-0-24		1.50	16	41	20	21	17	6	3	24	50		0.0052	9.5000	A-7-6 (12)
B-002-0-24		3.00	2												A-1-a (V)
B-002-0-24		4.50	16												A-7-6 (V)
B-002-0-24		6.00	20												A-7-6 (V)
B-002-0-24		7.50	5												A-1-a (V)
B-002-0-24		9.00	13	34	17	17	26	8	4	23	39		0.0173	28.8426	A-6b (8)
B-002-0-24		10.50	21												A-7-6 (V)
B-002-0-24		12.00	26												A-7-6 (V)
B-002-0-24		13.50	13	43	22	21	30	4	2	19	45		0.0098	34.3572	A-7-6 (11)

PROJECT HAM-275-11.40 Landslide

LOCATION Hamilton County, Ohio

JOB NO. 24780173

DATE 7/10/25

SUMMARY OF LABORATORY TEST RESULTS



BORING	S A M P L E (#)	Top Depth (ft)	MC %	LL %	PL %	PI %	A G G R E G A T E %	C O A R S E S A N D %	F I N E S A N D %	S I L T %	C L A Y %	S I L T / C L A Y %	D / 50	D / 95	H R B ODOT	
													m m	m m	CLASSIFICATION	
B-002-0-24		15.00	18													A-7-6 (V)
B-002-0-24		16.50	19													A-7-6 (V)
B-002-0-24		18.00	17													A-7-6 (V)
B-002-0-24		19.50	17	44	23	21	9	7	3	33	48		0.0057	6.7466		A-7-6 (13)
B-002-0-24		21.00														
B-002-0-24		22.50	14													A-7-6 (V)
B-002-0-24		24.00	22													A-7-6 (V)
B-002-0-24		25.50	16	39	18	21	19	11	4	19	47		0.0068	19.6903		A-6b (11)
B-002-0-24		27.00	17													A-7-6 (V)
B-002-0-24		28.50	21													A-7-6 (V)
B-002-0-24		30.00	21	44	19	25	2	2	2	30	64			0.1683		A-7-6 (15)
B-002-0-24		31.50	9													A-7-6 (V)
B-002-0-24		33.00														
B-002-0-24		34.50	9	39	21	18	22	6	4	24	44		0.0094	30.7073		A-6b (10)
B-002-0-24		36.00	12													A-7-6 (V)
B-002-1-24		0.00	6													A-2-6 (V)
B-002-1-24		1.50	15	41	22	19	2	8	5	31	54			1.1969		A-7-6 (12)
B-002-1-24		8.50	29	41	19	22	10	8	5	30	47		0.0064	7.2723		A-7-6 (13)
B-002-1-24		9.00	19													A-7-6 (V)
B-002-1-24		10.50														A-7-6 (V)
B-002-1-24		12.00	18	50	21	29	5	6	4	26	59			2.0864		A-7-6 (18)
B-002-1-24		13.50	49													A-6a (V)
B-002-1-24		15.00	27	55	23	32	0	2	1	29	68			0.0618		A-7-6 (19)
B-002-1-24		16.50	21													A-7-6 (V)
B-002-1-24		18.00	22													A-7-6 (V)
B-002-1-24		19.50	18	52	20	32	1	1	1	23	74			0.0583		A-7-6 (18)
B-002-1-24		21.00	20													A-7-6 (V)
B-002-1-24		22.50	1													A-7-6 (V)
B-002-1-24		24.00														A-7-6 (V)
B-002-1-24		25.50	12	41	17	24	24	10	5	16	45		0.0111	22.3584		A-7-6 (11)

PROJECT HAM-275-11.40 Landslide

LOCATION Hamilton County, Ohio

JOB NO. 24780173

DATE 7/10/25

SUMMARY OF LABORATORY TEST RESULTS



BORING	S A M P L E (#)	Top Depth (ft)	MC %	LL %	PL %	PI %	A G G R E G A T E %	C O A R S E S A N D %	F I N E S A N D %	S I L T %	C L A Y %	S I L T / C L A Y %	D / 50 m m	D / 95 m m	H R B ODOT CLASSIFICATION
B-002-1-24		27.00													A-7-6 (V)
B-002-2-24		0.00	15												A-7-6 (V)
B-002-2-24		1.50	19	45	19	26	7	7	4	25	57			3.7836	A-7-6 (15)
B-002-2-24		3.00	11												A-7-6 (V)
B-002-2-24		4.50	14	37	20	17	40	13	5	15	27		0.7148	35.0496	A-6b (3)
B-002-2-24		6.00	9												A-2-6 (V)
B-002-2-24		7.50	13	37	19	18	31	14	15	11	29		0.1500	15.7072	A-6b (3)
B-002-2-24		9.00	15												A-7-6 (V)
B-002-2-24		10.50	20												A-7-6 (V)
B-002-2-24		12.00	25												A-7-6 (V)
B-002-2-24		13.50	16	46	23	23	11	4	3	27	55			9.5000	A-7-6 (14)
B-002-2-24		15.00	10												A-7-6 (V)
B-002-2-24		16.50	14												A-7-6 (V)
B-003-0-24		0.00	19												A-7-6 (V)
B-003-0-24		1.50	6												A-7-6 (V)
B-003-0-24		3.00	15	42	21	21	11	4	3	32	50		0.0050	4.9365	A-7-6 (13)
B-003-0-24		4.50	15												A-7-6 (V)
B-003-0-24		6.00													A-7-6 (V)
B-003-0-24		7.50	17	43	20	23	6	4	3	32	55			2.8252	A-7-6 (14)
B-003-0-24		9.00	20												A-7-6 (V)
B-003-0-24		10.50	18												A-7-6 (V)
B-003-0-24		12.00	15	39	19	20	12	7	4	34	43		0.0086	4.7364	A-6b (12)
B-003-0-24		13.50													A-1-b (V)
B-003-0-24		15.00	9	37	19	18	44	11	5	14	26		0.9712	21.7826	A-6b (3)
B-003-0-24		16.50	13												A-7-6 (V)
B-003-0-24		18.00	14												A-7-6 (V)
B-003-0-24		19.50	17	46	21	25	14	5	4	29	48		0.0057	10.6369	A-7-6 (15)
B-003-0-24		21.00	18												A-7-6 (V)
B-003-0-24		22.50	21												A-7-6 (V)
B-003-0-24		24.00	25	52	24	28	3	2	3	34	58			0.5807	A-7-6 (18)

PROJECT HAM-275-11.40 Landslide

LOCATION Hamilton County, Ohio

JOB NO. 24780173

DATE 7/10/25

PROJECT	HAM-275-11.40 Landslide		
LOCATION	Hamilton County, Ohio		
JOB NO.	24780173	DATE	7/10/25

UNIAXIAL COMPRESSIVE STRENGTH OF ROCK

ASTM D7012 Method C



S&ME, Inc. - Lexington: 2020 Liberty Road, Suite 105, Lexington, KY 40505

Project No.:	24780173	Report Date:	06/30/25
Project Name:	HAM-275-11.40 Landslide (PID:121506)	Test Date(s):	06/27/25
Client Name:	Stantec		
Client Address:	10200 Alliance Road, Suite 300, Cincinnati, OH 45242	Received Date:	06/09/25
Location:	B-001-0-24	Depth, ft:	32.1 - 32.5
Sample Description:	Weathered Shale		

Angle of load relative to lithology: Approximately perpendicular

Test Results

Moisture Content 9.6 % Dry Unit Weight 130.3 pcf
Compressive Strength 137 psi



Before Test

After Test

Strain rate: 0.015 in/min.

Notes / Deviations / References: Per ASTM D4543 7.6, for specimens which have physical characteristics which prevent planing the sample to within the flatness requirement it is permissible to cap them with gypsum. This specimen was too fragile for planing to within the flatness requirement and was capped with gypsum. The sides of the specimen were not sufficiently straight affecting accurate perpendicularity measurements.

Jacob Folsom
Technical Responsibility

Jacob Folsom
Signature

Laboratory Services Manager
Position

7/3/2025
Date

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UNIAXIAL COMPRESSIVE STRENGTH OF ROCK

ASTM D7012 Method C



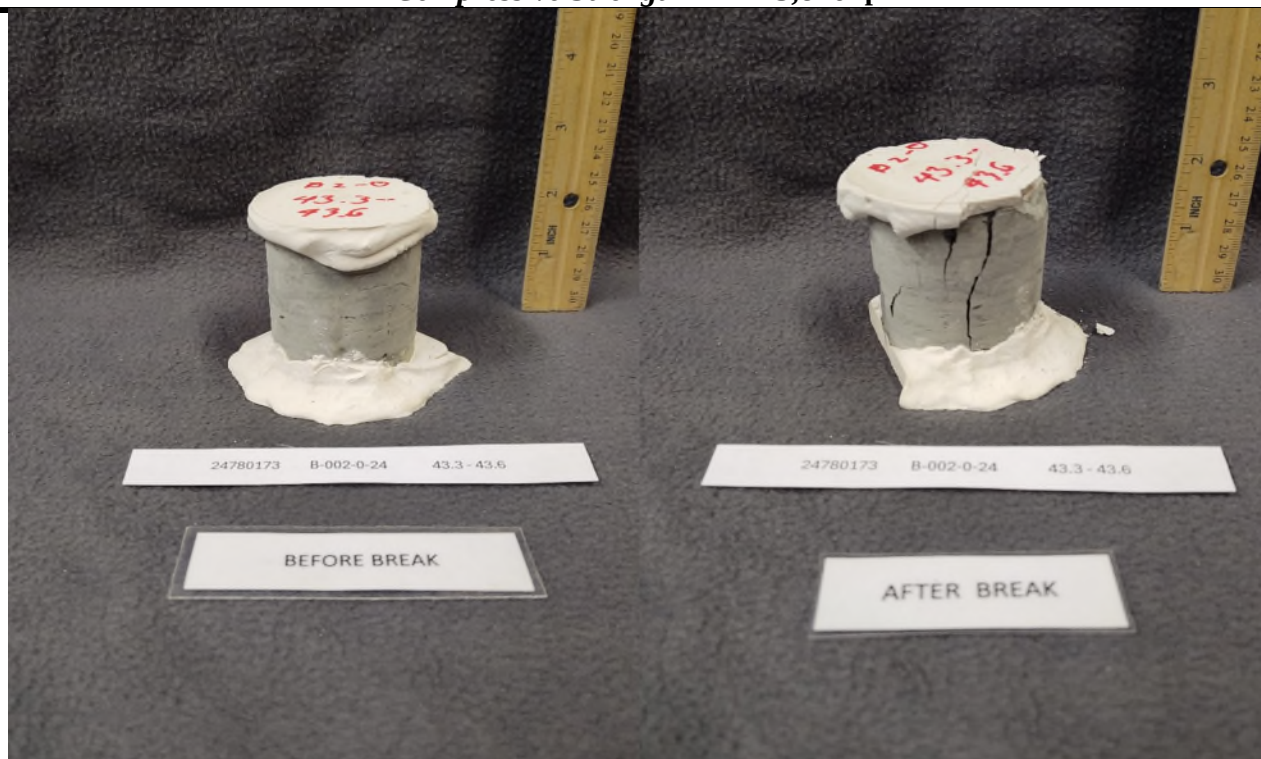
S&ME, Inc. - Lexington: 2020 Liberty Road, Suite 105, Lexington, KY 40505

Project No.:	24780173	Report Date:	06/30/25
Project Name:	HAM-275-11.40 Landslide (PID:121506)	Test Date(s):	06/27/25
Client Name:	Stantec		
Client Address:	10200 Alliance Road, Suite 300, Cincinnati, OH 45242	Received Date:	06/09/25
Location:	B-002-0-24	Depth, ft:	43.3 - 43.6
Sample Description:	Shale		

Angle of load relative to lithology: Approximately perpendicular

Test Results

Moisture Content 1.9 % Dry Unit Weight 155.2 pcf
Compressive Strength 5,826 psi



Before Test

After Test

Strain rate: 0.015 in/min.

Notes / Deviations / References: Test specimen did not meet the ASTM standard specifications for height to diameter ratio and for core preparation. Test results for specimens not prepared in accordance with this method may differ from test results from specimens meeting this requirement. The sides of the specimen were not sufficiently straight. This specimen was too fragile for planing to within the flatness requirement and was capped with gypsum.

Jacob Folsom
Technical Responsibility

Jacob Folsom
Signature

Laboratory Services Manager
Position

7/3/2025
Date

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UNIAXIAL COMPRESSIVE STRENGTH OF ROCK

ASTM D7012 Method C



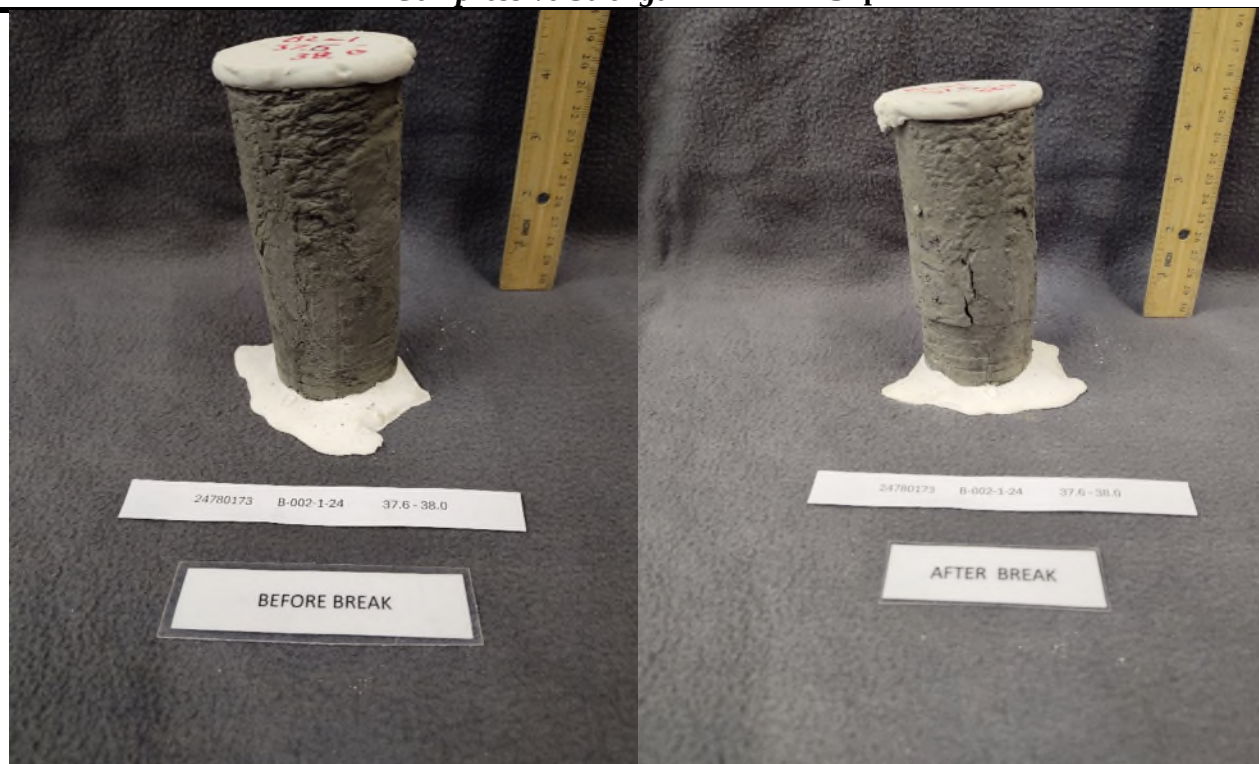
S&ME, Inc. - Lexington: 2020 Liberty Road, Suite 105, Lexington, KY 40505

Project No.:	24780173	Report Date:	06/30/25
Project Name:	HAM-275-11.40 Landslide (PID:121506)	Test Date(s):	06/27/25
Client Name:	Stantec		
Client Address:	10200 Alliance Road, Suite 300, Cincinnati, OH 45242	Received Date:	06/09/25
Location:	B-002-1-24	Depth, ft:	37.6 - 38.0
Sample Description:	Weathered Shale		

Angle of load relative to lithology: Approximately perpendicular

Test Results

Moisture Content 10.3 % Dry Unit Weight 132.2 pcf
Compressive Strength 113 psi



Before Test

After Test

Strain rate: 0.015 in/min.

Notes / Deviations / References: Per ASTM D4543 7.6, for specimens which have physical characteristics which prevent planing the sample to within the flatness requirement it is permissible to cap them with gypsum. This specimen was too fragile for planing to within the flatness requirement and was capped with gypsum. The sides of the specimen were not sufficiently straight affecting accurate perpendicularity measurements.

Jacob Folsom
Technical Responsibility

Jacob Folsom
Signature

Laboratory Services Manager
Position

7/3/2025
Date

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UNIAXIAL COMPRESSIVE STRENGTH OF ROCK

ASTM D7012 Method C



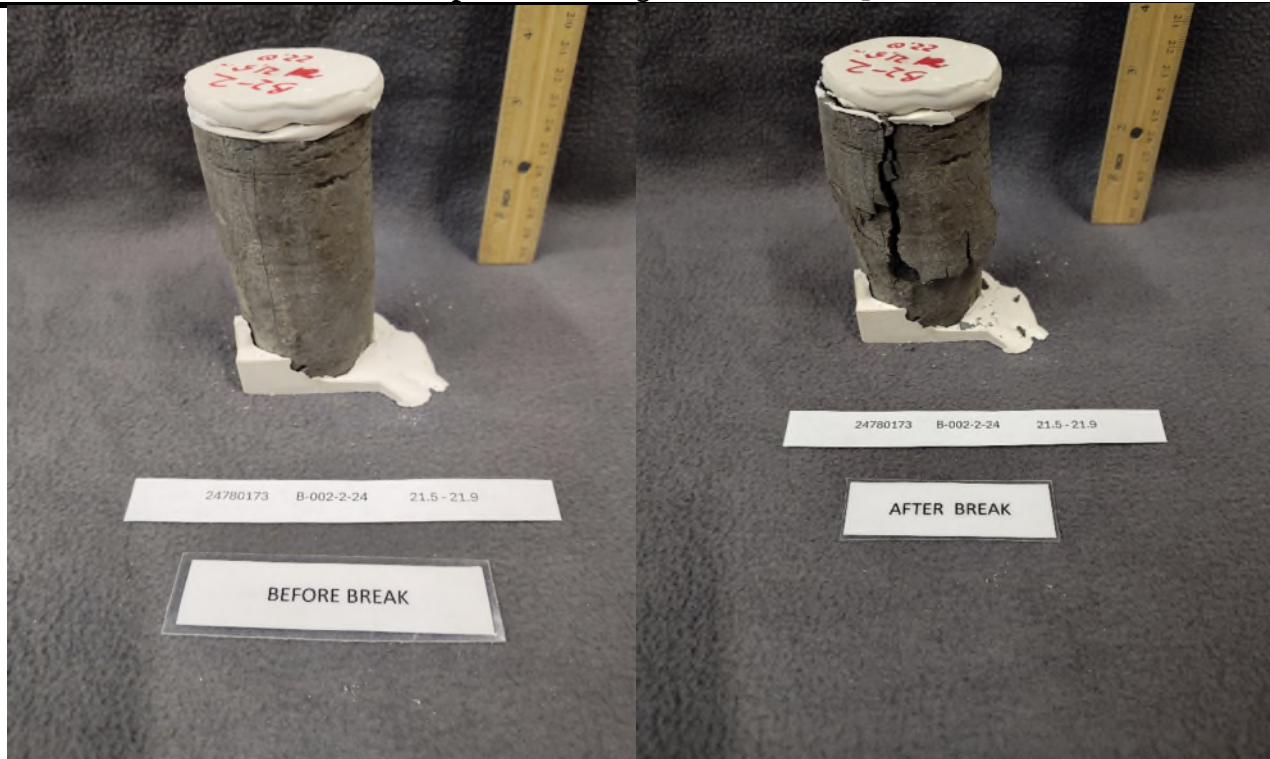
S&ME, Inc. - Lexington: 2020 Liberty Road, Suite 105, Lexington, KY 40505

Project No.:	24780173	Report Date:	06/30/25
Project Name:	HAM-275-11.40 Landslide (PID:121506)	Test Date(s):	06/27/25
Client Name:	Stantec		
Client Address:	10200 Alliance Road, Suite 300, Cincinnati, OH 45242	Received Date:	06/09/25
Location:	B-002-2-24	Depth, ft:	21.5 - 21.9
Sample Description:	Weathered Shale		

Angle of load relative to lithology: Approximately perpendicular

Test Results

Moisture Content 11.0 % Dry Unit Weight 126.8 pcf
Compressive Strength 157 psi



Before Test

After Test

Strain rate: 0.015 in/min.

Notes / Deviations / References: Per ASTM D4543 7.6, for specimens which have physical characteristics which prevent planing the sample to within the flatness requirement it is permissible to cap them with gypsum. This specimen was too fragile for planing to within the flatness requirement and was capped with gypsum. The sides of the specimen were not sufficiently straight affecting accurate perpendicularity measurements.

Jacob Folsom
Technical Responsibility

Jacob Folsom
Signature

Laboratory Services Manager
Position

7/3/2025
Date

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UNIAXIAL COMPRESSIVE STRENGTH OF ROCK

ASTM D7012 Method C



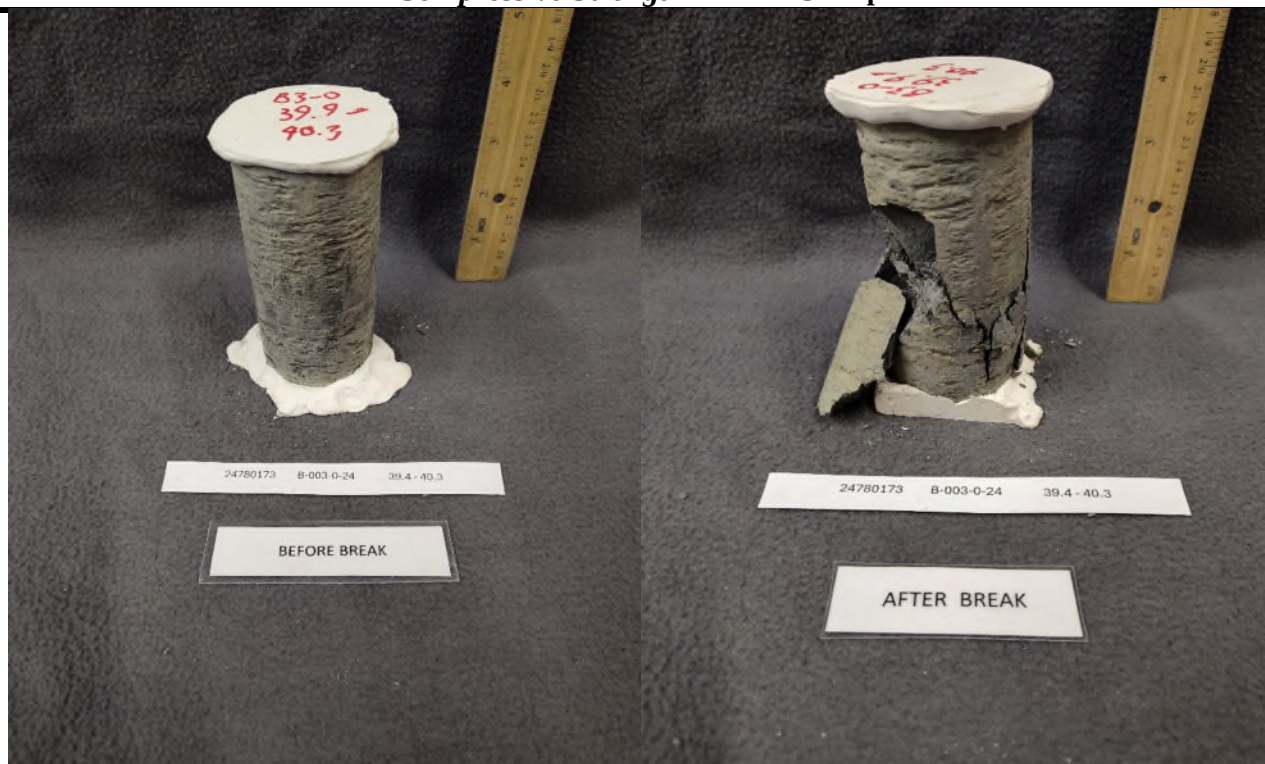
S&ME, Inc. - Lexington: 2020 Liberty Road, Suite 105, Lexington, KY 40505

Project No.:	24780173	Report Date:	06/30/25
Project Name:	HAM-275-11.40 Landslide (PID:121506)	Test Date(s):	06/27/25
Client Name:	Stantec		
Client Address:	10200 Alliance Road, Suite 300, Cincinnati, OH 45242	Received Date:	06/09/25
Location:	B-003-0-24	Depth, ft:	39.9 - 40.3
Sample Description:	Weathered Shale		

Angle of load relative to lithology: Approximately perpendicular

Test Results

Moisture Content 7.4 % **Dry Unit Weight** 138.5 pcf
Compressive Strength 521 psi



Before Test

After Test

Strain rate: 0.015 in/min.

Notes / Deviations / References: Per ASTM D4543 7.6, for specimens which have physical characteristics which prevent planing the sample to within the flatness requirement it is permissible to cap them with gypsum. This specimen was too fragile for planing to within the flatness requirement and was capped with gypsum. The sides of the specimen were not sufficiently straight affecting accurate perpendicularity measurements.

Jacob Folsom
 Technical Responsibility

Jacob Folsom
 Signature

Laboratory Services Manager
 Position

7/3/2025
 Date

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MOISTURE, ASH, AND ORGANIC MATTER



ASTM D-2974

S&ME, Inc. Cincinnati: 862 East Crescentville Road, West Chester, OH 45246

Project #:	25780173	Report Date:	07/10/25
Project Name:	HAM-275-11.40 Landslide	Test Date(s):	6/19-6/25/25
Client Name:	Stantec		
Client Address:	10200 Alliance Road, Suite 300, Cincinnati, OH 45242		
Boring No.	B-002-0-24	Sample No.	SS-2
		Sample Date:	5/21/25
Location:		Sampled by:	Depth (ft.) 1.5-3.0

Equipment:	Balance: 0.01 g readability
Balance:	S&ME ID #: 26700 Cal. Date: 1/21/25 Due: 01/21/26

Method A: Moisture Content Determination

Required Oven Temperature : $110 \pm 5^{\circ}\text{C}$

Oven Temperature: 110°C		Tare #	10
t	Tare Weight (Dish plus Aluminum Foil Cover)	grams	22.43
a	Mass of As-Received Specimen + Tare Wt.	grams	82.37
b	Mass of Oven Dry Specimen + Tare Wt.	grams	71.38
w	Water Weight	(a-b)	10.99
A	Mass of As-Received Specimen	(a-t)	59.94
B	Mass of Oven Dry Specimen	(b-t)	48.95
% Moisture Content as a % of As Received or Total Mass		(w/A)*100	18.3%
% Moisture Content as a % of Oven-dried Mass		(w/B)*100	22.5%

Oven	S&ME ID #: 27008 Cal. Date: 12/27/24 Due: 12/27/25
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Method C (440° C) or D (750° C): Ash Content and Organic Matter Determination

Muffle Furnace: 440°C		Tare #	C
t	Tare Weight (Dish plus Aluminum Foil Cover)	grams	88.81
b	Mass of Oven Dry Specimen + Tare Wt.	grams	138.51
c	Ash Weight + Tare Wt.	grams	137.35
C	Ash Weight	c-t	48.54
B	Mass of Oven Dry Specimen	(b-t)	49.70
D	% Ash Content	(C/B)*100	97.7%
	% Organic Matter	100-D	2.3%

Muffle Furnace:	S&ME ID #: 24239 Cal. Date: Due:
-----------------	----------------------------------

Notes / Deviations / References: ASTM D2974: Moisture, Ash, and Organic Matter of Peat and Other Organic Soils

K. Cannady
Technician Name

6/23-6/24/25
Date

on file
Signature

P5
Level/Certification

K. Cannady
Technical Responsibility

Signature

OAS
Position

6/25/2025
Date

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MOISTURE, ASH, AND ORGANIC MATTER



ASTM D-2974

S&ME, Inc. Cincinnati: 862 East Crescentville Road, West Chester, OH 45246

Project #:	25780173	Report Date:	07/10/25
Project Name:	HAM-275-11.40 Landslide	Test Date(s):	6/19-6/25/25
Client Name:	Stantec		
Client Address:	10200 Alliance Road, Suite 300, Cincinnati, OH 45242		
Boring No.	B-002-2-24	Sample No.	SS-2
		Sample Date:	5/21/25
Location:		Sampled by:	Depth (ft.) 1.5-3.0

Equipment:	Balance: 0.01 g readability
Balance:	S&ME ID #: 26700 Cal. Date: 1/21/25 Due: 01/21/26

Method A: Moisture Content Determination

Required Oven Temperature : $110 \pm 5^{\circ}\text{C}$

Oven Temperature: 110 °C		Tare #	16
t	Tare Weight (Dish plus Aluminum Foil Cover)	grams	21.63
a	Mass of As-Received Specimen + Tare Wt.	grams	84.24
b	Mass of Oven Dry Specimen + Tare Wt.	grams	73.33
w	Water Weight	(a-b)	10.91
A	Mass of As-Received Specimen	(a-t)	62.61
B	Mass of Oven Dry Specimen	(b-t)	51.70
% Moisture Content as a % of As Received or Total Mass		(w/A)*100	17.4%
% Moisture Content as a % of Oven-dried Mass		(w/B)*100	21.1%

Oven	S&ME ID #: 27008 Cal. Date: 12/27/24 Due: 12/27/25
------	--

Method C (440 ° C) or D (750 ° C): Ash Content and Organic Matter Determination

Muffle Furnace: 440 °C		Tare #	B
t	Tare Weight (Dish plus Aluminum Foil Cover)	grams	89.69
b	Mass of Oven Dry Specimen + Tare Wt.	grams	142.51
c	Ash Weight + Tare Wt.	grams	140.88
C	Ash Weight	c-t	51.19
B	Mass of Oven Dry Specimen	(b-t)	52.82
D	% Ash Content	(C/B)*100	96.9%
	% Organic Matter	100-D	3.1%

Muffle Furnace:	S&ME ID #: 24239 Cal. Date: Due:
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Notes / Deviations / References: ASTM D2974: Moisture, Ash, and Organic Matter of Peat and Other Organic Soils

K. Cannady
Technician Name

6/23-6/24/25
Date

on file
Signature

P5
Level/Certification

K. Cannady
Technical Responsibility

Signature

OAS
Position

6/25/2025
Date

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