

PROJECT: JEF-7-25.70	DRILLING FIRM / OPERATOR: ODOT / LEWIS	DRILL RIG: CME 850R TRACKED	STATION / OFFSET: _____	EXPLORATION ID: B-001-0-16
TYPE: LANDSLIDE	SAMPLING FIRM / LOGGER: ODOT / LEWIS	HAMMER: CME AUTOMATIC	ALIGNMENT: _____	
PID: No PID SFN: N/A	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 5/27/15	ELEVATION: 771.5 (MSL) EOB: 27.5 ft.	PAGE 1 OF 1
START: 5/16/16 END: 5/17/16	SAMPLING METHOD: SPT	ENERGY RATIO (%): 87	LAT / LONG: 40.469778, -80.604261	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	ABANDONED
								GR	CS	FS	SI	CL	LL	PL	PI			
ASPHALT (6") & CONCRETE (11")	771.5	1																
@1.4' - 4.5'; VOID	770.1	2																
		3																
	767.0	4																
LOOSE, BROWN, GRAVEL AND STONE FRAGMENTS WITH SAND, LITTLE SILT, TRACE CLAY, WET	765.5	5	1	7	22	SS-1A	-	35	26	17	15	7	NP	NP	NP	23	A-1-b (0)	
		6	2	3														
VERY STIFF, BROWN, SILT AND CLAY, SOME SAND, LITTLE GRAVEL, MOIST		7	3	13	44	SS-2A	2.50	16	12	15	29	28	29	18	11	18	A-6a (5)	
@7.5' - 10.5'; HARD		8	4	6	22	SS-3A	4.50	-	-	-	-	-	-	-	-	18	A-6a (V)	
		9	4	9														
		10	4	5	13	SS-4A	4.50	-	-	-	-	-	-	-	-	17	A-6a (V)	
		11	3	3	10	SS-5A	2.50	-	-	-	-	-	-	-	-	19	A-6a (V)	
		12	3	4														
@13.5'; STIFF, BROWN AND GRAY MOTTLED, TRACE ORGANICS		13	3	10	44	SS-6A	2.50	18	6	14	32	30	33	18	15	21	A-6a (7)	
		14	2	3	10	SS-7A	1.50	-	-	-	-	-	-	-	-	18	A-6a (V)	
		15	1	4														
	755.0	16	1	2	9	SS-8A	1.00	-	-	-	-	-	-	-	-	24	A-6a (V)	
		17	2	4														
SOFT TO MEDIUM STIFF, GRAY AND BROWN MOTTLED, SILT, SOME CLAY, LITTLE SAND, TRACE STONE FRAGMENTS, MOIST		18	2	2	7	SS-9A	1.00	7	3	8	57	25	26	17	9	21	A-4b (8)	
@18.0'; LITTLE CLAY, TRACE SAND, WET		19	0	3														
	752.0	20	0	0	0	SS-10A	0.50	4	3	5	69	19	24	19	5	23	A-4b (8)	
STIFF, BROWN AND GRAY MOTTLED, SANDY SILT, LITTLE TO SOME CLAY, TRACE STONE FRAGMENTS, DAMP TO MOIST		21	1	2	9	SS-11A	1.50	16	6	14	45	19	23	17	6	16	A-4a (6)	
		22	1	4	9	SS-12A	1.00	-	-	-	-	-	-	-	-	20	A-4a (V)	
		23		3														
		24	2	4	12	SS-13A	1.00	12	12	10	43	23	27	17	10	16	A-4a (6)	
		25		4														
		26	6															
	744.0	27	4	13	50	SS-14A	1.50	-	-	-	-	-	-	-	-	20	A-4a (V)	
		EOB	5															

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 6/1/16 08:28 - X:\GINT\PROJECTS\600242_1.GPJ

NOTES: LOCATION TO BE BACKFILLED THROUGH CONSTRUCTION OF A SPRING DRAIN AND LSM TO STABILIZE ROADWAY. LAT/LONG/ELEV FROM OGE HANDHELD GPS UNIT.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: NOT RECORDED

PROJECT: JEF-7-25.70	DRILLING FIRM / OPERATOR: ODOT / LEWIS	DRILL RIG: CME 75 TRUCK	STATION / OFFSET: CENTERLINE OF SR 7	EXPLORATION ID: B-001-1-19
TYPE: UNDERGROUND MINE	SAMPLING FIRM / LOGGER: ODOT / MCINTOSH	HAMMER: CME AUTOMATIC	ALIGNMENT: CENTERLINE OF SR 7	PAGE: 1 OF 2
PID: 109848 SFN:	DRILLING METHOD: 3.25" HSA / NQ	CALIBRATION DATE: 6/1/17	ELEVATION: 778.3 (MSL) EOB: 122.0 ft.	
START: 1/30/19 END: 2/13/19	SAMPLING METHOD: SPT	ENERGY RATIO (%): 85	LAT / LONG: 40.469783, -80.604205	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (G)	MON. WELL
								GR	CS	FS	SI	CL	LL	PL	PI			
ASPHALT (6"), CONCRETE (10") & ASPHALT (26")	778.3																	
NOTE: AFTER CORING THROUGH CONCRETE WATER WAS RUNNING TOWARD CENTER DIVIDER THROUGH A GAP BELOW CONCRETE.		1																
		2	5	4	10	44	SS-1	-	-	-	-	-	-	-	11			
	774.8	3																
MEDIUM DENSE, BROWN AND BLACK, SANDY SILT, SOME CLAY, SOME STONE FRAGMENTS, WITH BRICK FRAGMENTS, FILL, DAMP		4	2	7	17	78	SS-2	-	21	6	14	29	30	NP	NP	NP	15	A-4a (5)
		5																
		6	0	10	24	22	SS-3	-	-	-	-	-	-	-	-	-	17	A-4a (V)
		7																
		8																
		9	1	7	18	33	SS-4	-	-	-	-	-	-	-	-	-	15	A-4a (V)
	767.3	10																
VERY STIFF, BROWN AND BLACK, SILTY CLAY, SOME STONE FRAGMENTS, LITTLE SAND, MODERATELY ORGANIC (LOI = 4.7%), FILL, MOIST		11	4	15	34	44	SS-5	3.00	26	3	10	28	33	35	19	16	20	A-6b (8)
@13.5'; MEDIUM STIFF, WITH GLASS FRAGMENTS		12																
		13																
@16.0'; STIFF, WITH ROOTS		14	WOH	WOH	0	56	SS-6	1.00	-	-	-	-	-	-	-	-	26	A-6b (V)
		15	WOH	WOH														
		16																
@18.5'; VERY SOFT		17	1	1	3	44	SS-7	1.50	-	-	-	-	-	-	-	-	24	A-6b (V)
		18																
		19	WOH	WOH	0	6	SS-8	-	-	-	-	-	-	-	-	-	29	A-6b (V)
	758.3	20	WOH	WOH														
SOFT, BROWN, SILT AND CLAY, SOME SAND, LITTLE STONE FRAGMENTS, MOIST		21	WOH	WOH	3	67	SS-9	0.50	18	12	11	39	20	28	17	11	19	A-6a (5)
@21.5'; STIFF, SOME STONE FRAGMENTS, LITTLE SAND		22	WOH	WOH	4	44	SS-10	2.00	25	5	6	37	27	30	18	12	18	A-6a (7)
		23																
@24.5'; MEDIUM STIFF		24	1	1	4	67	SS-11	1.50	-	-	-	-	-	-	-	-	22	A-6a (V)
		25																
@26.0'; STIFF, "AND" STONE FRAGMENTS		26	1	2	7	33	SS-12	1.00	-	-	-	-	-	-	-	-	21	A-6a (V)
		27																
@27.5'; MEDIUM STIFF		28	2	4	10	67	SS-13	1.00	44	3	11	24	18	28	17	11	24	A-6a (2)
		29																
		30	WOH	WOH	4	56	SS-14	1.00	-	-	-	-	-	-	-	-	27	A-6a (V)
		31																
@30.5'; STIFF, SOME STONE FRAGMENTS		32	1	1	4	44	SS-15	1.00	-	-	-	-	-	-	-	-	19	A-6a (V)
		33																
@32.0'; DAMP		34	1	1	4	56	SS-16	1.50	21	2	9	41	27	34	21	13	26	A-6a (8)
		35																
		36	1	2	11	56	SS-17	1.50	-	-	-	-	-	-	-	-	20	A-6a (V)
		37																
		38	2	3	11	44	SS-18	1.50	-	-	-	-	-	-	-	-	18	A-6a (V)
		39																
MEDIUM STIFF, GRAYISH BROWN, SANDY SILT, SOME STONE FRAGMENTS, SOME CLAY, MOIST		40	5	10	31	56	SS-19	1.00	-	-	-	-	-	-	-	-	18	A-6a (V)
	739.8	41																
		42	1	2	7	33	SS-20	1.00	28	4	14	30	24	26	17	9	18	A-4a (4)
		43																
@43.5'; STIFF		44	1	1	4	11	SS-21	1.00	-	-	-	-	-	-	-	-	18	A-4a (V)
		45																
@46.0'; BROWN, "AND" STONE FRAGMENTS		46	1	2	9	22	SS-22	1.00	-	-	-	-	-	-	-	-	19	A-4a (V)
		47																
		48	1	3	13	44	SS-23	1.00	37	4	14	24	21	27	17	10	18	A-4a (2)
		49																
@48.5'; BROWN WITH BLACK, WITH COAL FRAGMENTS/REFUSE		50	1	1	10	56	SS-24	1.50	-	-	-	-	-	-	-	-	18	A-4a (V)
		51																
STIFF, BROWN WITH BLACK, SILTY CLAY, SOME STONE FRAGMENTS, LITTLE SAND, DAMP TO MOIST		52	1	3	14	89	SS-25	1.00	27	5	12	26	30	33	17	16	20	A-6b (7)
	727.3	53																
		54	1	3	11	33	SS-26	1.00	-	-	-	-	-	-	-	-	14	A-6b (V)
		55																
		56	2	2	7	56	SS-27	2.00	-	-	-	-	-	-	-	-	18	A-6b (V)
		57																
@58.5'; BROWN AND GRAY		58	1	2	4	33	SS-28	2.00	-	-	-	-	-	-	-	-	17	A-6b (V)

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 3/8/19 08:52 - X:\GINT\PROJECTS\60607.GPJ

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	MON. WELL		
								GR	CS	FS	SI	CL	LL	PL	PI					
VERY STIFF, DARK GRAY AND BLACK, SILTY CLAY , "AND" GRAVEL, TRACE SAND, MOIST	718.2 717.3	61 62	1 2	9	16	44	SS-29	3.00	47	1	5	22	25	39	19	20	26	A-6b (6)		
SOFT TO STIFF, BROWN, SILTY CLAY , SOME STONE FRAGMENTS, LITTLE SAND, MOIST	714.8	63 64 65	1 WOR WOR		0	33	SS-30	1.50	-	-	-	-	-	-	-	-	20	A-6b (V)		
@66.0': VERY SOFT, ENCOUNTERED SANDSTONE FRAGMENTS		66 67	WOR WOR		0	11	SS-31	-	-	-	-	-	-	-	-	-	10	A-6b (V)		
@68.5': STIFF, REDDISH BROWN AND GRAY, WITH COAL FRAGMENTS		68 69 70	WOR WOR WOR		0	44	SS-32	2.00	27	3	10	29	31	35	19	16	21	A-6b (7)		
@71.0': DARK GRAY AND BROWN		71 72	WOR WOR		0	22	SS-33	1.00	-	-	-	-	-	-	-	-	22	A-6b (V)		
VERY LOOSE, REDDISH BROWN AND GRAY, SILT , SOME SAND, LITTLE CLAY, TRACE STONE FRAGMENTS, DAMP TO MOIST	704.8	73 74 75	WOR WOR 2		3	67	SS-34	-	4	2	25	55	14	NP	NP	NP	14	A-4b (7)		
@76.0': GRAYISH BROWN		76 77	1 1	2	4	56	SS-35	-	-	-	-	-	-	-	-	-	11	A-4b (V)		
@78.5': GRAYISH BROWN AND BROWN		78 79 80	WOH WOH WOH		0	67	SS-36	-	-	-	-	-	-	-	-	-	22	A-4b (V)		
		81 82	WOR WOR		0	78	SS-37	-	4	2	25	53	16	NP	NP	NP	21	A-4b (7)		
STIFF TO VERY STIFF, GRAY, SILT AND CLAY , SOME STONE FRAGMENTS, LITTLE SAND, DAMP	694.8	83 84 85	1 2 5		10	44	SS-38	2.00	32	2	11	28	27	29	17	12	17	A-6a (5)		
SHALE , GRAY, HIGHLY WEATHERED, VERY WEAK, LAMINATED.	691.7	86 87	8 11	20	44	67	SS-39A SS-39B	3.50 -	-	-	-	-	-	-	-	-	15 9	A-6a (V) Rock (V)		
		88 89																		
SHALE , GRAYISH BLACK, MODERATELY WEATHERED, WEAK, LAMINATED TO THIN VERY BEDDED, CARBONACEOUS, POORLY FISSLE, VERY BLOCKY, GOOD; RQD 0%, REC 59%. @92.0' - 93.0'; S _c = 1,292 psi	688.3	90 91 92	21 29 41		99	67	SS-40	-	-	-	-	-	-	-	-	-	10	Rock (V)		
		93 94 95 96																		
COAL , BLACK, MODERATELY WEATHERED, IMPURE; RQD 0%, REC 94%	681.2	97																		
SHALE , GRAYISH BLACK, MODERATELY WEATHERED, WEAK TO SLIGHTLY STRONG, LAMINATED TO THIN VERY BEDDED, CARBONACEOUS, POORLY FISSLE, VERY BLOCKY, GOOD; RQD 0%, REC 67%	679.8	98 99				35	NQ-3													
VOID , PARTIALLY FILLED WITH COAL, SHALE AND CLAY.	677.8	100 101 102 103 104 105 106																		
		107 108 109																		
CLAYSTONE , LIGHT GRAY, SLIGHTLY WEATHERED, THICK BEDDED, BLOCKY, GOOD; RQD 45%, REC 100%	668.8	110	23		60		NQ-5													
		111 112																		
SANDSTONE , LIGHT GRAY, SLIGHTLY WEATHERED, MODERATELY STRONG, FINE GRAINED, VERY THIN TO THIN BEDDED, MICACEOUS; RQD 94%, REC 96%. @113.1'; LOW ANGLE FRACTURE. @ 114.3' - 114.7'; γ = 164 pcf; Qu = 5,782 psi	666.2	113 114 115 116 117 118 119				95	NQ-6													
		120 121				95	NQ-7													
	656.3	122																		

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH.DOT.GDT - 3/8/19 08:52 - X:\GINT\PROJECTS\60607.GPJ

NOTES: LAT/LONG/ELEV FROM OGE HANDHELD GPS UNIT. S_c = POINT LOAD STRENGTH VALUES AS PER ASTM D 5731.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED 100 LB. BENTONITE GROUT; PUMPED 90 LB. CEMENT; POURED 1 BAG CONCRETE



PROJECT: JEF-7-25.70	DRILLING FIRM / OPERATOR: OTB / A. FAY	DRILL RIG: OTB MOBILE B-57	STATION / OFFSET: _____	EXPLORATION ID: B-001-2-19
TYPE: MINE SUBSIDENCE	SAMPLING FIRM / LOGGER: S&ME / J. WILSON	HAMMER: CME AUTOMATIC	ALIGNMENT: S.R. 7	PAGE 1 OF 4
PID: 109848 BR ID: N/A	DRILLING METHOD: 3.25" HSA / NQ	CALIBRATION DATE: 11/5/18	ELEVATION: 1000.0 (MSL) EOB: 118.0 ft.	
START: 4/23/19 END: 4/24/19	SAMPLING METHOD: SPT / NQ	ENERGY RATIO (%): 90*	LAT / LONG: 40.469814 N, 80.604432 W	

MATERIAL DESCRIPTION AND NOTES	ELEV. 1000.0	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	HOLE SEALED
								GR	CS	FS	SI	CL	LL	PL	PI			
ASPHALT - 36 INCHES																		
	997.0	1	8															
		2	5	11	56	SS-1	-	-	-	-	-	-	-	-	-	-	Visual (V)	
		3																
Stiff to very-stiff grayish-brown SILT, little to some fine to coarse sand, little clay, trace fine gravel, few zones of medium-stiff sandy silt, moist.		4	1	5	39	SS-2	-	-	-	-	-	-	-	-	-	21	A-4b (V)	
		5																
		6	3															
		7	3	11	94	SS-3	-	9	9	8	58	16	26	19	7	19	A-4b (8)	
		8																
- Brown in SS-4.		9	1	8	100	SS-4	-	-	-	-	-	-	-	-	-	24	A-4b (V)	
		10																
- Gray in SS-5.		11	2															
		12	4	14	100	SS-5	-	5	9	11	56	19	25	18	7	18	A-4b (8)	
		13																
- Brown in SS-6.		14	3	15	78	SS-6	-	-	-	-	-	-	-	-	-	13	A-4b (V)	
	984.5	15	5															
Stiff to very-stiff greenish-gray SILT AND CLAY, some fine to coarse sand, trace to little fine gravel, damp.		16	2															
		17	3	11	72	SS-7	1.7-2.0	-	-	-	-	-	-	-	-	17	A-6a (V)	
		18																
		19	2	15	100	SS-8	1.9-2.5	15	22	10	35	18	27	16	11	13	A-6a (4)	
		20	4															
		21	2															
		22	4	14	100	SS-9	1.3-2.2	-	-	-	-	-	-	-	-	19	A-6a (V)	
		23																
		24	1	11	100	SS-10	1.6-2.0	-	-	-	-	-	-	-	-	23	A-6a (V)	
	974.5	25	3															
Stiff to very-stiff greenish-gray SILT AND CLAY, some fine to coarse gravel (sandstone fragments), some fine to coarse sand, few cobbles, damp.		26	50-4"	-	100	SS-11	-	-	-	-	-	-	-	-	-	6	A-6a (V)	
		27																
		28																
		29	3	13	44	78	SS-12	1.6-2.2	31	13	14	24	18	28	16	12	13	A-6a (2)
			16															

S&ME ODOT LOG (8.5X11) - SGE 07/2018 - OH DOT.GDT - 6/12/19 10:15 - T:\RESOURCES\C\S01 - LABORATORY02 - GINTWPROJ\ECTS\1179-18-026M.GPJ

PLATE 5



PID: 109848		BR ID: N/A		PROJECT: JEF-7-25.70		STATION / OFFSET:		START: 4/23/19		END: 4/24/19		PG 2 OF 4		B-001-2-19							
MATERIAL DESCRIPTION AND NOTES			ELEV. 970.0	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	HOLE SEALED	
										GR	CS	FS	SI	CL	LL	PL	PI				
Stiff to very-stiff greenish-gray SILT AND CLAY , some fine to coarse sand, trace fine gravel, damp.			969.5	31	7																
			32	9	27	61	SS-13	2.0-2.6	-	-	-	-	-	-	-	-	-	14	A-6a (V)		
			33																		
			34	3	6	21	100	SS-14	2.1-2.7	8	16	13	30	33	32	17	15	15	A-6a (8)		
			35																		
			36	6	6	21	78	SS-15	1.8-2.0	-	-	-	-	-	-	-	-	-	7	A-6a (V)	
			37																		
			38																		
			39	3	5	18	100	SS-16	1.3-2.2	-	-	-	-	-	-	-	-	-	13	A-6a (V)	
			40																		
Very-stiff to hard brown SILT AND CLAY , some fine to coarse sand, little fine to coarse gravel (sandstone fragments), damp.			959.5	41	4																
			42	8	35	100	SS-17	3.0-4.1	-	-	-	-	-	-	-	-	-	13	A-6a (V)		
			43																		
			44	5	9	30	100	SS-18	3.1-3.4	16	16	12	30	26	30	17	13	13	A-6a (5)		
			45																		
			46	4	11	41	94	SS-19	2.7-3.2	-	-	-	-	-	-	-	-	-	8	A-6a (V)	
			47																		
			48																		
Hard gray SILTY CLAY , little to some fine to coarse sand, trace fine gravel (sandstone fragments), damp.			952.0	49	5																
			50	12	35	100	SS-20	4.0-4.2	-	-	-	-	-	-	-	-	-	13	A-6b (V)		
Very-stiff greenish-gray SILTY CLAY , some fine to coarse sand, trace fine gravel (sandstone fragments), few stiff and hard zones, damp.			949.5	51	5																
			52	9	30	100	SS-21	3.1-3.6	5	16	15	30	34	34	17	17	15	A-6b (9)			
			53																		
			54	4	6	29	100	SS-22	2.7-2.8	-	-	-	-	-	-	-	-	-	16	A-6b (V)	
			55																		
			56	7	9	39	100	SS-23	3.0-3.2	-	-	-	-	-	-	-	-	-	17	A-6b (V)	
			57																		
			58																		
			59	3	5	20	100	SS-24	1.6-2.1	-	-	-	-	-	-	-	-	-	17	A-6b (V)	
			60																		
			61	5	11	41	100	SS-25	4.5+	-	-	-	-	-	-	-	-	-	14	A-6b (V)	

S&ME ODOT LOG (8.5X11) - SGE 07/2018 - OH DOT.GDT - 6/12/19 10:15 - T:\RESOURCES\CS01 - LABORATORY\02 - GINTWP\PROJECTS\1179-18-026M.GPJ

PLATE 6



PID: 109848		BR ID: N/A		PROJECT: JEF-7-25.70		STATION / OFFSET:		START: 4/23/19		END: 4/24/19		PG 3 OF 4		B-001-2-19									
MATERIAL DESCRIPTION AND NOTES				ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			ODOT CLASS (GI)	HOLE SEALED			
											GR	CS	FS	SI	CL	LL	PL	PI			WC		
Very-stiff greenish-gray SILTY CLAY , some fine to coarse sand, trace fine gravel (sandstone fragments), few stiff and hard zones, damp. (continued)				937.9																			
				63	16																		
				64	4	8	32	100	SS-26	2.6-3.6	-	-	-	-	-	-	-	-	-	-	17	A-6b (V)	
				65		13																	
				66	6	9	33	100	SS-27	3.1-3.3	7	16	15	33	29	33	17	16	16		A-6b (8)		
				67		13																	
				68																			
				69	7	9	38	100	SS-28	3.0-3.2	-	-	-	-	-	-	-	-	-	-	16	A-6b (V)	
				70		16																	
				71																			
72	6	10	36	100	SS-29	3.0-3.5	-	-	-	-	-	-	-	-	-	-	15	A-6b (V)					
73		14																					
74	21	29	93	100	SS-30	3.2-4.5+	-	-	-	-	-	-	-	-	-	-	12	A-6b (V)					
75		33																					
76				TR																			
SANDSTONE , gray, severely weathered, weak to slightly strong, fractured.				924.5																			
77																							
78																							
SANDSTONE , light gray, slightly weathered, medium grained, moderately strong, very thick bedded, slightly micaceous, slightly to moderately fractured, narrow fractures with slightly rough surfaces, blocky, good condition, RQD = 84%, REC = 95%.				922.0																			
79		75	92																CORE				
80																							
SHALE , gray becoming dark gray to black, highly weathered to 84.7' then moderately weathered, thick to very thick bedded, carbonaceous below 86.5', highly to moderately fractured, narrow to open fractures with slightly rough surfaces, blocky/disturbed/seamy, poor to fair condition, RQD = 39%, REC = 96%.				918.9																			
81		58	100																CORE				
82																							
83																							
84																							
85																							
86		50	97																CORE				
87																							
88																							
89																							
90																							
91		25	93																CORE				
92																							
93																							
94																							

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PLATE 7



PID: 109848		BR ID: N/A		PROJECT: JEF-7-25.70		STATION / OFFSET:		START: 4/23/19		END: 4/24/19		PG 4 OF 4		B-001-2-19						
MATERIAL DESCRIPTION AND NOTES			ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	HOLE SEALED
										GR	CS	FS	SI	CL	LL	PL	PI			
INTERBEDDED COAL (54%) AND SANDSTONE (46%), RQD = 46%, REC = 97%; COAL , black, moderately weathered, weak to slightly strong, thin to medium bedded, highly fractured to fractured, narrow to open fractures with slightly rough surfaces, blocky/disturbed/seamy, poor to fair condition; SANDSTONE , dark gray (gray from 100.8' to 101.7'), slightly to moderately weathered, fine grained, moderately strong, thick bedded, carbonaceous, moderately fractured, narrow fractures with slightly rough surfaces, blocky, fair to good condition. - Mini tool drops/fast coring (less than 0.5-inch) occurring between 96.0' to 97.5' and 102.0' to 105.0'.			905.7																	
			905.3	95	55		95	NQ-36											CORE	
				96																
				97																
				98																
UNDERCLAY , gray, severely weathered, very weak to weak, very thick bedded, moderately fractured, narrow fractures with slightly rough surfaces, very blocky, fair condition, RQD = 74%, REC = 100%.			894.7	99																
				100	58		97	NQ-37											CORE	
				101																
				102																
				103																
SANDSTONE , light gray, slightly weathered, very fine grained, moderately strong, very thick bedded, micaceous, slightly calcareous, slightly to moderately fractured, narrow fractures with very rough surfaces, intact, good, RQD = 85%, REC = 96%.			882.0	104																
				105	32		100	NQ-38												CORE
				106																
				107																
				108																
SANDSTONE , light gray, slightly weathered, very fine grained, moderately strong, very thick bedded, micaceous, slightly calcareous, slightly to moderately fractured, narrow fractures with very rough surfaces, intact, good, RQD = 85%, REC = 96%.			888.2	109																
				110	88		100	NQ-39												CORE
				111																
				112																
				113																
SANDSTONE , light gray, slightly weathered, very fine grained, moderately strong, very thick bedded, micaceous, slightly calcareous, slightly to moderately fractured, narrow fractures with very rough surfaces, intact, good, RQD = 85%, REC = 96%.			882.0	114																
				115	83		95	NQ-40												CORE
				116																
				117																
				118																
EOB																				
NOTES: - Groundwater encountered at 3.5' during drilling. - Encountered auger refusal at 78'. - Water measured inside hollow-stem augers at 6.2' after coring. - *Signifies that the energy ratio has been limited to 90%.																				
NOTES: SEE ABOVE.																				
ABANDONMENT METHODS, MATERIALS, QUANTITIES: 2 BAG BENTONITE POWDER; 8 BAG CEMENT; 1 PLASTIC HOLE PLUG DEVICE; WATER																				

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PLATE 8



PROJECT: <u>JEF-7-25.70</u>	DRILLING FIRM / OPERATOR: <u>OTB / A. FAY</u>	DRILL RIG: <u>OTB MOBILE B-57</u>	STATION / OFFSET: _____	EXPLORATION ID: B-002-0-19
TYPE: <u>MINE SUBSIDENCE</u>	SAMPLING FIRM / LOGGER: <u>S&ME / J. WILSON</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>S.R. 7</u>	PAGE: 1 OF 5
PID: <u>109848</u> BR ID: <u>N/A</u>	DRILLING METHOD: <u>3.25" HSA / NQ</u>	CALIBRATION DATE: <u>11/5/18</u>	ELEVATION: <u>1000.0 (MSL)</u> EOB: <u>124.5 ft.</u>	
START: <u>4/15/19</u> END: <u>4/16/19</u>	SAMPLING METHOD: <u>SPT / NQ</u>	ENERGY RATIO (%): <u>90*</u>	LAT / LONG: <u>40.469684 N, 80.604234 W</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV. 1000.0	DEPTH	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				HOLE SEALED		
								GR	CS	FS	SI	CL	LL	PL	PI	WC		ODOT CLASS (GI)	
ASPHALT - 36-1/2 INCHES		1																	
	996.5	2	6	20	61	SS-1	-	-	-	-	-	-	-	-	-	-	-	Visual (V)	
		3	6	7															
Very-stiff to hard brown SILTY CLAY , little to some fine to coarse sand, little fine gravel (sandstone and shale fragments), damp.		4	5	17	89	SS-2	3.6-3.8	-	-	-	-	-	-	-	-	-	17	A-6b (V)	
		5	5	6															
		6	3	6	23	78	SS-3	4.3-4.5+	17	10	8	37	28	36	17	19	14	A-6b (10)	
		7	6	9															
		8																	
		9	3	5	17	100	SS-4	4.1-4.5+	-	-	-	-	-	-	-	-	-	13	A-6b (V)
		10																	
		11	3	5	20	100	SS-5	3.3-4.5	-	-	-	-	-	-	-	-	-	13	A-6b (V)
		12																	
		13																	
	984.5	14	4	17	100	SS-6	3.6-3.7	-	-	-	-	-	-	-	-	-	16	A-6b (V)	
		15																	
Very-stiff brown CLAY , some silt, some fine to coarse sand, little fine to coarse gravel (sandstone and shale fragments), moist.		16	5	10	38	100	SS-7	2.0-2.2	20	11	11	30	28	43	21	22	24	A-7-6 (10)	
	981.5	17		15															
Very-dense gray and black SANDY SILT , some fine to coarse gravel (sandstone fragments), little clay, wet.		18																	
	979.5	19	35	50-4"	-	100	SS-8	-	-	-	-	-	-	-	-	-	24	A-4a (V)	
Stiff to very-stiff brown SILTY CLAY , little fine to coarse sand, trace fine to coarse gravel, moist.		20																	
		21	4	5	17	72	SS-9	2.1-2.4	-	-	-	-	-	-	-	-	18	A-6b (V)	
		22		6															
		23																	
		974.0	24	2	4	12	100	SS-10	1.3-2.8	10	9	7	41	33	36	18	18	19	A-6b (11)
Stiff to very-stiff gray SILT AND CLAY , some fine to coarse sand, little to some fine to coarse gravel (sandstone fragments), few very-soft to medium-stiff zones, few cobbles, moist.		25																	
		26	3	2	8	100	SS-11	0.0-2.6	-	-	-	-	-	-	-	-	24	A-6a (V)	
		27		3															
		28																	
			29	3	5	17	100	SS-12	1.3-1.9	12	9	18	36	25	31	16	15	23	A-6a (7)

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PID: 109848		BR ID: N/A		PROJECT: JEF-7-25.70		STATION / OFFSET:		START: 4/15/19		END: 4/16/19		PG 2 OF 5		B-002-0-19								
MATERIAL DESCRIPTION AND NOTES			ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			ODOT CLASS (GI)	HOLE SEALED			
										GR	CS	FS	SI	CL	LL	PL	PI			WC		
Stiff to very-stiff gray SILT AND CLAY , some fine to coarse sand, little to some fine to coarse gravel (sandstone fragments), few very-soft to medium-stiff zones, few cobbles, moist. (continued)			970.0	31	4	20	72	SS-13	2.6-3.2	-	-	-	-	-	-	-	-	21	A-6a (V)			
				32	5	8																
				33																		
				34	3	7	21	83	SS-14	1.7-2.1	31	11	13	25	20	30	17	13	17	A-6a (3)		
				35																		
				36	9	10	33	56	SS-15	3.7-3.9	-	-	-	-	-	-	-	-	-	21	A-6a (V)	
				37		12																
				38																		
				39	2	8	29	44	SS-16	0.6-0.9	-	-	-	-	-	-	-	-	-	23	A-6a (V)	
				40		11																
- Possible cobble at 44.5'.			954.0	41	4																	
				42	12	8	30	83	SS-17	2.0-2.1	-	-	-	-	-	-	-	-	17	A-6a (V)		
				43																		
				44	3	10	68	100	SS-18	1.0-1.5	-	-	-	-	-	-	-	-	-	18	A-6a (V)	
				45		35																
				46	5	6	23	78	SS-19	0.6-1.2	31	10	14	23	22	29	16	13	17	A-6a (3)		
				47		9																
				48																		
				49	3	6	24	78	SS-20	2.4-2.5	-	-	-	-	-	-	-	-	-	20	A-6a (V)	
				50		10																
Stiff to very-stiff dark-brown SILT AND CLAY , some fine to coarse gravel (sandstone fragments), some fine to coarse sand, damp to moist.			941.5	51	6																	
				52	8	12	30	94	SS-21	2.0-2.2	-	-	-	-	-	-	-	-	18	A-6a (V)		
				53																		
				54	4	6	30	100	SS-22	2.4-3.3	-	-	-	-	-	-	-	-	-	19	A-6a (V)	
				55		14																
				56	5	10	32	100	SS-23	3.7-4.5+	-	-	-	-	-	-	-	-	-	16	A-6a (V)	
				57		11																
				58																		
				59	8	10	35	100	SS-24	1.5-2.0	-	-	-	-	-	-	-	-	-	21	A-6a (V)	
				60		13																
Stiff to very-stiff light-brown SILT AND CLAY , some fine to coarse sand, little fine gravel (sandstone fragments), moist.			941.5	61	7																	
					9	33	100	SS-25	2.6-	14	8	18	36	24	29	15	14	16	A-6a (7)			

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PLATE 10



PID: 109848		BR ID: N/A		PROJECT: JEF-7-25.70		STATION / OFFSET:		START: 4/15/19		END: 4/16/19		PG 3 OF 5		B-002-0-19											
MATERIAL DESCRIPTION AND NOTES				ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	HOLE SEALED				
											GR	CS	FS	SI	CL	LL	PL	PI							
Stiff to very-stiff light-brown SILT AND CLAY , some fine to coarse sand, little fine gravel (sandstone fragments), moist. (continued)				937.9	63	13					3.2														
						8	8	27	100	SS-26	2.1-2.7	-	-	-	-	-	-	-	-	-	-	-	19	A-6a (V)	
Dense to very-dense light-brown SILT , some fine sand, little clay, trace coarse sand, trace fine gravel, damp to moist.				934.5	64	8	10																		
					65	8	11	32	94	SS-27	-	-	-	-	-	-	-	-	-	-	-	15	A-4b (V)		
					66	8	10	32	100	SS-28	-	1	1	21	61	16	NP	NP	NP			20	A-4b (8)		
					67	8	11	38	100	SS-29	-	-	-	-	-	-	-	-	-	-	-	-	19	A-4b (V)	
					68	8	11	38	100	SS-29	-	-	-	-	-	-	-	-	-	-	-	-	19	A-4b (V)	
					69	16	15	47	100	SS-30	-	-	-	-	-	-	-	-	-	-	-	-	17	A-4b (V)	
					70	16	15	47	100	SS-30	-	-	-	-	-	-	-	-	-	-	-	-	17	A-4b (V)	
					71	11	20	78	100	SS-31	-	-	-	-	-	-	-	-	-	-	-	-	16	A-4b (V)	
					72	11	20	78	100	SS-31	-	-	-	-	-	-	-	-	-	-	-	-	16	A-4b (V)	
					73	11	20	78	100	SS-31	-	-	-	-	-	-	-	-	-	-	-	-	16	A-4b (V)	
Very-stiff to hard gray SILT AND CLAY , some fine to coarse sand, little fine to coarse gravel (sandstone and shale fragments), moist.				922.0	74	6	11	42	100	SS-32	3.3-3.9	15	7	17	31	30	30	15	15	16	A-6a (7)				
					75	12	30	80	94	SS-33	2.8-4.5+	-	-	-	-	-	-	-	-	-	-	16	A-6a (V)		
					76	10	20	60	100	SS-34	4.5+	-	-	-	-	-	-	-	-	-	-	15	A-6a (V)		
					77	10	20	60	100	SS-34	4.5+	-	-	-	-	-	-	-	-	-	-	-	15	A-6a (V)	
					78	10	20	60	100	SS-34	4.5+	-	-	-	-	-	-	-	-	-	-	-	15	A-6a (V)	
SHALE , gray, severely weathered, very-weak to weak, fractured.				913.0	79	8	30	-	100	SS-35	4.5+	-	-	-	-	-	-	-	-	14	A-6a (V)				
					80	8	30	-	100	SS-35	4.5+	-	-	-	-	-	-	-	-	-	14	A-6a (V)			
					81	50	50-5'	-	100	SS-36	-	-	-	-	-	-	-	-	-	-	-	12	Rock (V)		
					82	50	50-5'	-	100	SS-36	-	-	-	-	-	-	-	-	-	-	-	12	Rock (V)		
SEE NEXT PAGE				906.5	83	50	50-5'	-	100	SS-37	-	-	-	-	-	-	-	-	19	Rock (V)					
					84	50	50-5'	-	100	SS-37	-	-	-	-	-	-	-	-	-	-	19	Rock (V)			
					85																				
					86																				
					87																				
					88																				
					89																				
					90																				
					91																				
					92																				
					93																				
					94																				

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PLATE 11



PID: 109848		BR ID: N/A		PROJECT: JEF-7-25.70		STATION / OFFSET:		START: 4/15/19		END: 4/16/19		PG 4 OF 5		B-002-0-19														
MATERIAL DESCRIPTION AND NOTES				ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			ODOT CLASS (GI)	HOLE SEALED								
											GR	CS	FS	SI	CL	LL	PL	PI			WC							
<p>SHALE, gray to dark gray, highly weathered, very weak to weak, medium bedded, carbonaceous, friable, few coal partings, fractured to moderately fractured, narrow fractures with slightly rough surfaces, blocky/disturbed/seamy, poor to fair condition, RQD = 44%, REC = 88%. <i>(continued)</i></p>				905.7																CORE								
					95	21		71	NQ-38																			
					96	63		92	NQ-39															CORE				
<p>SHALE, gray to dark gray, highly weathered, very weak to weak, medium bedded, carbonaceous, friable, few coal partings, fractured to moderately fractured, narrow fractures with slightly rough surfaces, blocky/disturbed/seamy, poor to fair condition, RQD = 44%, REC = 88%. <i>(continued)</i></p>					97																							
					98	71		96	NQ-40															CORE				
					99																							
<p>COAL, black, highly to severely weathered, very weak to weak, thin bedded, highly fractured to fractured, narrow to open fractures with slightly rough surfaces, blocky/disturbed/seamy, poor condition, few pieces of black shale, RQD = 20%, REC = 100%. - very fast coring from 101.0' to 103.0'.</p>				899.5																								
					100																							
					101																							
<p>COAL, black, highly to severely weathered, very weak to weak, thin bedded, highly fractured to fractured, narrow to open fractures with slightly rough surfaces, blocky/disturbed/seamy, poor condition, few pieces of black shale, RQD = 20%, REC = 100%. - very fast coring from 101.0' to 103.0'.</p>				897.0																								
					102	38		100	NQ-41																			
					103																							
<p>SANDSTONE, dark gray, slightly weathered, very fine grained, slightly to moderately strong, thick bedded, carbonaceous, moderately fractured, narrow to tight fractures with slightly rough surfaces, blocky, good condition, RQD = 91%, REC = 100%.</p>				894.2																								
					104																							
					105																							
<p>SANDSTONE, gray, slightly weathered, fine to medium grained, moderately strong, medium bedded, few very thin coal seams, slightly fractured, narrow fractures with slightly rough surfaces, intact, good condition, RQD = 100%, REC = 100%.</p>				893.1																								
					106																							
					107	55		100	NQ-42																		CORE	
<p>SANDSTONE, gray, slightly weathered, fine to medium grained, moderately strong, medium bedded, few very thin coal seams, slightly fractured, narrow fractures with slightly rough surfaces, intact, good condition, RQD = 100%, REC = 100%.</p>				888.9																								
					108																							
					109																							
<p>COAL, black, highly to severely weathered, very weak to weak, thin bedded, highly fractured to fractured, narrow to open fractures with slightly rough surfaces, blocky/disturbed/seamy, poor condition, few pieces of black shale, RQD = 14%, REC = 98%. - very fast coring from 107.5' to 109.5'.</p>				885.3																								
					110																							
					111																							
<p>UNDERCLAY, gray to light gray, highly weathered, very weak, thin bedded, moderately fractured, narrow fractures with slightly rough surfaces, blocky/disturbed/seamy, poor condition, becoming similar to claystone at 113', RQD = 47%, REC = 95%.</p>				884.1																								
					112	33		87	NQ-43																			CORE
					113																							
<p>SANDSTONE, light gray, highly weathered, very fine grained, very weak, thin bedded, slightly argillaceous, fractured to moderately fractured, narrow fractures with slightly rough surfaces, blocky/disturbed/seamy, poor condition, RQD = 86%, REC = 100%.</p>				885.3																								
					114																							
					115																							
<p>SANDSTONE, light gray to gray, slightly weathered, fine to medium grained, moderately strong, thick bedded, slightly micaceous and calcareous, moderately to slightly fractured, narrow to tight fractures with slightly rough surfaces, intact, good to very good condition, RQD = 96%, REC = 100%.</p>				884.1																								
					116																							
					117	90		100	NQ-44																			CORE
<p>SANDSTONE, light gray to gray, slightly weathered, fine to medium grained, moderately strong, thick bedded, slightly micaceous and calcareous, moderately to slightly fractured, narrow to tight fractures with slightly rough surfaces, intact, good to very good condition, RQD = 96%, REC = 100%.</p>				877.1																								
					118																							
					119																							
<p>SANDSTONE, light gray to gray, slightly weathered, fine to medium grained, moderately strong, thick bedded, slightly micaceous and calcareous, moderately to slightly fractured, narrow to tight fractures with slightly rough surfaces, intact, good to very good condition, RQD = 96%, REC = 100%.</p>				875.5																								
					120																							
					121	90		97	NQ-45																			CORE
<p>SHALE, light gray, moderately weathered, weak to slightly strong, thin bedded, arenaceous, fractured to moderately fractured, narrow fractures with slightly rough surfaces, very blocky, fair condition, 5" siltstone seam in middle of layer, RQD = 58%, REC = 89%.</p>				875.5																								
					122																							
					123																							
					124																							

S&ME ODOT LOG (8.5X11) - SGE 07/2018 - OH DOT GDT - 6/12/19 10:15 - T:\RESOURCES\C\S01 - LABORATORY\02 - GINTWPROJ\ECTS\1179-18-026M.GPJ

PLATE 12

EOB



PID: 109848	BR ID: N/A	PROJECT: JEF-7-25.70	STATION / OFFSET:	START: 4/15/19	END: 4/16/19	PG 5 OF 5	B-002-0-19
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MATERIAL DESCRIPTION AND NOTES	ELEV. 873.6	DEPTHS	SPT/ RQD	N ₆₀	REC SAMPLE (%)	ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	HOLE SEALED
								GR	CS	FS	SI	CL	LL	PL	PI	WC		

NOTES:
 - Groundwater encountered at 16.0' during drilling.
 - Water measured inside hollow-stem augers at 9.2' after coring.
 - *Signifies that the energy ratio has been limited to 90%.

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PLATE 13

NOTES: SEE ABOVE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG BENTONITE POWDER; 4 BAG CEMENT; 1 PLASTIC HOLE PLUG DEVICE; WATER



PROJECT: <u>JEF-7-25.70</u>	DRILLING FIRM / OPERATOR: <u>OTB / A. FAY</u>	DRILL RIG: <u>OTB MOBILE B-57</u>	STATION / OFFSET: _____	EXPLORATION ID: B-003-0-19
TYPE: <u>MINE SUBSIDENCE</u>	SAMPLING FIRM / LOGGER: <u>S&ME / J. WILSON</u>	HAMMER: <u>CME AUTOMATIC</u>	ALIGNMENT: <u>S.R. 7</u>	PAGE: 1 OF 5
PID: <u>109848</u> BR ID: <u>N/A</u>	DRILLING METHOD: <u>3.25" HSA / NQ</u>	CALIBRATION DATE: <u>11/5/18</u>	ELEVATION: <u>1000.0 (MSL)</u> EOB: <u>123.5 ft.</u>	
START: <u>4/17/19</u> END: <u>4/18/19</u>	SAMPLING METHOD: <u>SPT / NQ</u>	ENERGY RATIO (%): <u>90*</u>	LAT / LONG: <u>40.469839 N, 80.604196 W</u>	

MATERIAL DESCRIPTION AND NOTES	ELEV. 1000.0	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				HOLE SEALED		
								GR	CS	FS	SI	CL	LL	PL	PI	WC		ODOT CLASS (GI)	
ASPHALT - 64 INCHES	994.7	1	10																
		2	8	23	56	SS-1	-	-	-	-	-	-	-	-	-	-	Visual (V)		
		3																	
		4	5	5	18	67	SS-2	-	-	-	-	-	-	-	-	-	Visual (V)		
		5	7																
Very-stiff to hard brown SILTY CLAY , little fine sand, trace fine gravel (sandstone fragments), damp.	987.0	6	4	7	20	100	SS-3	4.0-4.5+	-	-	-	-	-	-	-	-	16	A-6b (V)	
		7	6																
		8																	
		9	4	6	21	100	SS-4	2.7-3.6	7	5	12	31	45	40	19	21	17	A-6b (12)	
		10	8																
Stiff light-brown SILTY CLAY , little fine to coarse sand, trace fine gravel, moist.	984.5	11	4	6	21	100	SS-5	2.5-4.4	-	-	-	-	-	-	-	-	15	A-6b (V)	
		12	8																
		13																	
		14	2	3	11	100	SS-6	1.0-1.6	-	-	-	-	-	-	-	-	-	23	A-4a (V)
		15	4																
Stiff to very-stiff light-brown SANDY SILT , little clay, little fine gravel, damp.	979.5	16	3	4	14	100	SS-7	1.3-1.5	17	19	13	33	18	26	16	10	14	A-4a (3)	
		17	5																
		18																	
		19	3	5	20	100	SS-8	2.6-3.4	-	-	-	-	-	-	-	-	-	13	A-4a (V)
		20	8																
Medium-stiff to stiff brown SILT AND CLAY , little fine to coarse sand, trace fine gravel, few sand seams from 21.0'-21.7', moist.	977.0	21	3	5	26	100	SS-9	0.5-1.1	-	-	-	-	-	-	-	-	19	A-6a (V)	
		22	12																
		23																	
		24	4	9	32	100	SS-10	1.6-2.2	11	10	8	39	32	34	19	15	18	A-6a (9)	
		25	12																
Stiff to very-stiff gray and brown SILT AND CLAY , little fine to coarse sand, little fine gravel (sandstone fragments), damp.		26	3	5	17	100	SS-11	2.2-2.3	-	-	-	-	-	-	-	-	-	16	A-6a (V)
		27	6																
		28																	
		29	5	4	15	100	SS-12	1.5-2.1	-	-	-	-	-	-	-	-	-	15	A-6a (V)
			6																

S&ME ODOT LOG (8.5X11) - SGE 07/2018 - OH DOT.GDT - 8/12/19 10:16 - T:\RESOURCES\S01 - LABORATORY02 - GINTWPROJ\ECTS\1179-18-026M.GPJ

PLATE 14



PID: 109848		BR ID: N/A		PROJECT: JEF-7-25.70		STATION / OFFSET:		START: 4/17/19		END: 4/18/19		PG 2 OF 5		B-003-0-19					
MATERIAL DESCRIPTION AND NOTES			ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			ODOT CLASS (GI)	HOLE SEALED
										GR	CS	FS	SI	CL	LL	PL	PI		
Very-stiff gray SANDY SILT , some fine to coarse gravel (sandstone fragments), some clay, damp.			970.0	31	4														
			969.5	32	8	24	72	SS-13	3.1-4.0	-	-	-	-	-	-	-	-	-	17
Stiff to very-stiff brown SILTY CLAY , little to some fine sand, little fine to coarse gravel (sandstone fragments), moist.			969.5	34	6	21	72	SS-14	3.1-3.6	30	9	12	27	22	26	16	10	14	A-4a (3)
				35	7														
- Hard in SS-17.			969.5	36	3	18	78	SS-15	1.0-2.6	-	-	-	-	-	-	-	-	13	A-6b (V)
				37	5														
- Possible cobble in SS-19.			969.5	39	3	20	72	SS-16	1.5-3.6	-	-	-	-	-	-	-	-	14	A-6b (V)
				40	5														
- Possible cobble in SS-19.			969.5	41	5	33	78	SS-17	4.5+	25	9	11	21	34	36	17	19	14	A-6b (8)
				42	10														
- Possible cobble in SS-19.			969.5	44	7	33	78	SS-18	2.1-3.0	-	-	-	-	-	-	-	-	14	A-6b (V)
				45	11														
- Possible cobble in SS-19.			969.5	46	60-2"	-	50	SS-19	-	-	-	-	-	-	-	-	-	13	Visual (V)
				47															
Very-soft brown SILTY CLAY , some fine to coarse gravel (sandstone fragments), some fine to coarse sand, damp.			969.5	49	2	9	28	SS-20	0.0-0.2	-	-	-	-	-	-	-	-	19	A-6b (V)
				50	3														
Stiff to very-stiff brown SILTY CLAY , little to some fine sand, little fine to coarse gravel (sandstone fragments), moist.			949.5	51	3	14	72	SS-21	1.0-1.6	-	-	-	-	-	-	-	-	20	A-6b (V)
				52	4														
- Becoming hard in SS-25.			949.5	54	3	14	100	SS-22	1.7-1.9	30	11	11	20	28	35	16	19	15	A-6b (6)
				55	6														
- Becoming hard in SS-25.			949.5	56	5	17	100	SS-23	1.5-2.6	-	-	-	-	-	-	-	-	15	A-6b (V)
				57	6														
- Becoming hard in SS-25.			949.5	59	5	35	94	SS-24	1.1-1.6	-	-	-	-	-	-	-	-	16	A-6b (V)
				60	10														
- Becoming hard in SS-25.			949.5	61	8	65	94	SS-25	4.0-	-	-	-	-	-	-	-	-	14	A-6b (V)
				62	15														

S&ME ODOT LOG (8.5X11) - SGE 07/2018 - OH DOT.GDT - 6/12/19 10:16 - T:\RESOURCES\S01 - LABORATORY\02 - GINTWPROJ\ECTS\1179-18-026M.GPJ

PLATE 15



PID: 109848		BR ID: N/A		PROJECT: JEF-7-25.70		STATION / OFFSET:		START: 4/17/19		END: 4/18/19		PG 3 OF 5		B-003-0-19													
MATERIAL DESCRIPTION AND NOTES				ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	HOLE SEALED						
											GR	CS	FS	SI	CL	LL	PL	PI									
				937.9																							
Medium-dense to dense light-brown SILT , some fine sand, little clay, trace coarse sand, trace fine gravel, moist.				937.0	63	28					4.3																
					64	5 8 12	30	94	SS-26	-	-	-	-	-	-	-	-	-	-	-	-	-	18	A-4b (V)			
					65																						
					66	7																					
					67	10 13	35	100	SS-27	-	1	1	24	56	18	NP	NP	NP					18	A-4b (8)			
					68																						
					69	8 13 15	42	78	SS-28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	A-4b (V)		
					70																						
					71	12																					
					72	13 15	42	100	SS-29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	A-4b (V)		
					73																						
					74	8 10 12	33	100	SS-30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	A-4b (V)		
	75																										
	76	9																									
	77	11 17	42	89	SS-31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	A-4b (V)						
	78																										
Very-stiff gray and brown SANDY SILT , some fine to coarse gravel (sandstone fragments), little clay, moist.				922.0	79	6 40 50-17	-	92	SS-32	-	28	8	22	26	16	20	16	4	12	12	A-4a (1)						
					80																						
	81	4																									
	82	2 1	5	72	SS-33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	A-4a (V)						
	83																										
Soft gray and brown SILT AND CLAY , "and" fine to coarse gravel (sandstone fragments), little fine to coarse sand, moist.				917.0	84	2 2 3	8	56	SS-34	0.2- 0.4	-	-	-	-	-	-	-	-	-	-	17	A-6a (V)					
					85																						
	86	4																									
	87	4 7	17	67	SS-35	0.4- 0.5	43	8	10	21	18	31	17	14	12				12	A-6a (2)							
	88																										
Soft to stiff gray SILT AND CLAY , some fine to coarse gravel, little fine to coarse sand, few sandstone and coal fragments, moist.				912.0	89	1 2 2	6	67	SS-36	0.4- 1.7	-	-	-	-	-	-	-	-	-	-	17	A-6a (V)					
					90																						
	91	2																									
	92	2 1	5	89	SS-37	1.2- 1.4	-	-	-	-	-	-	-	-	-	-	-	-	-	20	A-6a (V)						
	93																										
SEE NEXT PAGE				907.0	TR																						
					94	1																					

S&ME ODOT LOG (8.5X11) - SGE 07/2018 - OH DOT GDT - 6/12/19 10:16 - T1-RESOURCE\S01 - LABORATORY02 - GINTWPROJ\ECTS\1179-18-026M.GPJ
PLATE 16



PID: 109848	BR ID: N/A	PROJECT: JEF-7-25.70	STATION / OFFSET:	START: 4/17/19	END: 4/18/19	PG 4 OF 5	B-003-0-19
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MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	HOLE SEALED		
								GR	CS	FS	SI	CL	LL	PL	PI					
POSSIBLE MINE DEBRIS: Loose to medium-dense black SHALE and COAL fragments with interstices containing SANDY SILT, trace clay, moist. <i>(continued)</i>	905.7		5	15	100	SS-38	-	-	-	-	-	-	-	-	-	-	12	Visual (V)		
		95	5																	
		96	5																	
		97	4	6	15	78	SS-39	-	-	-	-	-	-	-	-	-	11	Visual (V)		
		98																		
		99	3	2	5	61	SS-40	-	-	-	-	-	-	-	-	-	20	Visual (V)		
		100		1																
		101	3	1	6	67	SS-41	-	-	-	-	-	-	-	-	-	14	Visual (V)		
		102		3																
		103																		
	894.5		1	5	11	56	SS-42	-	-	-	-	-	-	-	-	-	17	Visual (V)		
		104	2																	
PROBABLE MINE DEBRIS: Very-dense GRAVEL WITH SAND, little silt, trace clay, many shale and coal fragments, moist.		105																		
		106	8	8	39	100	SS-43	-	24	27	24	19	6	NP	NP	NP	14	Visual (V)		
		107		18																
		108																		
		109	50-4"			100	SS-44	-	-	-	-	-	-	-	-	-	26	Visual (V)		
		110																		
	886.5		0	0	48	100	SS-45	-	-	-	-	-	-	-	-	-	25	Visual (V)		
		111		32																
		112																		
SANDSTONE, dark gray, slightly weathered, fine to medium grained, moderately strong, thick bedded, micaceous, slightly fractured, narrow fractures with slightly rough surfaces, intact, good condition, RQD = 89%, REC = 93%.		113	50-1"			100	SS-46	-	-	-	-	-	-	-	-	-	14	Rock (V)		
		114	71			100	NQ-47	-	-	-	-	-	-	-	-	-	-	CORE		
		115																		
	881.1		89		89		NQ-48											CORE		
		116																		
SILTSTONE, gray, slightly weathered, very fine grained, slightly strong, thin bedded, slightly fractured, tight fractures with slightly rough surfaces, blocky, good condition, RQD = 100%, REC = 100%.		117																		
		118																		
SANDSTONE, light gray, slightly weathered, fine to medium grained, moderately strong, thick bedded, micaceous, slightly fractured, narrow fractures with slightly rough surfaces, intact, good condition, RQD = 100%, REC = 100%.		880.1																		
		119																		
	876.5		93		100		NQ-49											CORE		
		120																		
		121																		
		122																		
		123																		

EOB

NOTES:

- Groundwater encountered at 58.5' during drilling.
- Water measured inside hollow-stem augers at 88' after coring.

S&ME ODOT LOG (8.5X11) - SGE 07/2018 - OH DOT.GDT - 6/12/19 10:16 - T:\RESOURCES\CS01 - LABORATORY\02 - GINTWPROJ\ECTS\1179-18-026M.GPJ
 PLATE 17



PID: 109848	BR ID: N/A	PROJECT: JEF-7-25.70	STATION / OFFSET:	START: 4/17/19	END: 4/18/19	PG 5 OF 5	B-003-0-19											
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC SAMPLE (%) ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	HOLE SEALED
		873.6						GR	CS	FS	SI	CL	LL	PL	PI	WC		
<p>- Samples 20 through 23 were obtained in an offset boring located 5 feet from the original location.</p> <p>- *Signifies that the energy ratio has been limited to 90%.</p>																		
<p>NOTES: SEE ABOVE.</p>																		
<p>ABANDONMENT METHODS, MATERIALS, QUANTITIES: 2 BAG BENTONITE POWDER; 6 BAG CEMENT; 1 PLASTIC HOLE PLUG DEVICE; WATER</p>																		

S&ME ODOT LOG (8.5X11) - SGE 07/2018 - OH DOT.GDT - 6/12/19 10:16 - T:\RESOURCES\C\S01 - LABORATORY\02 - GINTWPROJECTS\1179-18-026M.GPJ

PLATE 18

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 8/25/20 11:58 - C:\USERS\PCICHOCK\DESKTOP\JEF-7-25.70 FINAL COMBINED BORING LOGS.GPJ

PID: 109848		SFN:		PROJECT: JEF-7-25.70		STATION / OFFSET:		START: 6/3/20		END: 6/3/20		PG 3 OF 4		B-004-0-20									
MATERIAL DESCRIPTION AND NOTES			ELEV. 710.9	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	HOLE SEALED			
										GR	CS	FS	SI	CL	LL	PL	PI						
VERY STIFF TO HARD, BROWN GRAY MOTTLED, SILT AND CLAY , SOME STONE FRAGMENTS AND SAND, FINE TO COARSE GRAINED, DAMP (continued)			710.9	63	7																		
				64	9	41	100	SS-25	1.50	-	-	-	-	-	-	-	-	-	-	16	A-6a (V)		
				65	19																		
				66	50/2"	-	100	SS-26	-	-	-	-	-	-	-	-	-	-	-	-	-	4	A-6a (V)
706.0				TR																			
SANDSTONE, GRAY, SLIGHTLY WEATHERED, MODERATELY STRONG TO STRONG, FINE TO MEDIUM GRAINED, THIN BEDDED.			704.0	67	50/1"	-	100	SS-27	-	-	-	-	-	-	-	-	-	-	-	58	Rock (V)		
SHALE, GRAY, DECOMPOSED TO HIGHLY WEATHERED, VERY WEAK, VERY FINE GRAINED, THINLY LAMINATED, INTERBEDDED WITH SANDSTONE SEAMS.			704.0	68	55		76	NQ-1													CORE		
SHALE, GRAY, DECOMPOSED TO HIGHLY WEATHERED, VERY WEAK, VERY FINE GRAINED, THINLY LAMINATED, INTERBEDDED WITH SANDSTONE SEAMS.			697.8	69																			
SHALE, GRAY, DECOMPOSED TO HIGHLY WEATHERED, VERY WEAK, VERY FINE GRAINED, THINLY LAMINATED, INTERBEDDED WITH SANDSTONE SEAMS.			697.8	70																			
SHALE, GRAY, DECOMPOSED TO HIGHLY WEATHERED, VERY WEAK, VERY FINE GRAINED, THINLY LAMINATED, INTERBEDDED WITH SANDSTONE SEAMS.			697.8	71																			
SHALE, GRAY, DECOMPOSED TO HIGHLY WEATHERED, VERY WEAK, VERY FINE GRAINED, THINLY LAMINATED, INTERBEDDED WITH SANDSTONE SEAMS.			697.8	72																			
SHALE, GRAY, DECOMPOSED TO HIGHLY WEATHERED, VERY WEAK, VERY FINE GRAINED, THINLY LAMINATED, INTERBEDDED WITH SANDSTONE SEAMS.			697.8	73	0		35	NQ-2														CORE	
SHALE, GRAY, DECOMPOSED TO HIGHLY WEATHERED, VERY WEAK, VERY FINE GRAINED, THINLY LAMINATED, INTERBEDDED WITH SANDSTONE SEAMS.			697.8	74																			
SHALE, GRAY, DECOMPOSED TO HIGHLY WEATHERED, VERY WEAK, VERY FINE GRAINED, THINLY LAMINATED, INTERBEDDED WITH SANDSTONE SEAMS.			697.8	75																			
SANDSTONE, GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN TO LAMINATED, ARGILLACEOUS, SHALE STRINGERS.			693.0	76																			
SANDSTONE, GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN TO LAMINATED, ARGILLACEOUS, SHALE STRINGERS.			693.0	77																			
SANDSTONE, GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN TO LAMINATED, ARGILLACEOUS, SHALE STRINGERS.			693.0	78	84		100	NQ-3														CORE	
SANDSTONE, GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN TO LAMINATED, ARGILLACEOUS, SHALE STRINGERS.			693.0	79																			
SANDSTONE, GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN TO LAMINATED, ARGILLACEOUS, SHALE STRINGERS.			693.0	80																			
SANDSTONE, GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN TO LAMINATED, ARGILLACEOUS, SHALE STRINGERS.			693.0	81																			
SANDSTONE, GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN TO LAMINATED, ARGILLACEOUS, SHALE STRINGERS.			693.0	82																			
SANDSTONE, GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN TO LAMINATED, ARGILLACEOUS, SHALE STRINGERS.			693.0	83																			
SANDSTONE, GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN TO LAMINATED, ARGILLACEOUS, SHALE STRINGERS.			693.0	84																			
SANDSTONE, GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN TO LAMINATED, ARGILLACEOUS, SHALE STRINGERS.			693.0	85	56		98	NQ-4														CORE	
SANDSTONE, GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN TO LAMINATED, ARGILLACEOUS, SHALE STRINGERS.			693.0	86																			
SANDSTONE, GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN TO LAMINATED, ARGILLACEOUS, SHALE STRINGERS.			693.0	87																			
SANDSTONE, GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN TO LAMINATED, ARGILLACEOUS, SHALE STRINGERS.			693.0	88																			
SANDSTONE, GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN TO LAMINATED, ARGILLACEOUS, SHALE STRINGERS.			693.0	89																			
SANDSTONE, GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN TO LAMINATED, ARGILLACEOUS, SHALE STRINGERS.			693.0	90																			
SANDSTONE, GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN TO LAMINATED, ARGILLACEOUS, SHALE STRINGERS.			693.0	91																			
SANDSTONE, GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN TO LAMINATED, ARGILLACEOUS, SHALE STRINGERS.			693.0	92																			
SANDSTONE, GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN TO LAMINATED, ARGILLACEOUS, SHALE STRINGERS.			693.0	93																			
SANDSTONE, GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN TO LAMINATED, ARGILLACEOUS, SHALE STRINGERS.			693.0	94																			

C

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 8/25/20 11:58 - C:\USERS\PCICHOCK\DESKTOP\JEF-7-25.70 FINAL COMBINED BORING LOGS.GPJ

PID: 109848		SFN:		PROJECT: JEF-7-25.70		STATION / OFFSET:		START: 6/3/20		END: 6/3/20		PG 4 OF 4		B-004-0-20						
MATERIAL DESCRIPTION AND NOTES			ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	HOLE SEALED
										GR	CS	FS	SI	CL	LL	PL	PI			
COAL , BLACK, HIGHLY WEATHERED, WEAK TO SLIGHTLY STRONG, VERY FINE GRAINED, THINLY LAMINATED, FRIABLE. <i>(continued)</i>			678.8	95	30		90	NQ-5										CORE		
SANDSTONE , BLACK, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN BEDDED, CARBONACEOUS.			676.8	96																
SANDSTONE , BLACK, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN BEDDED, CARBONACEOUS.			673.6	97																
SANDSTONE , GRAY, MODERATELY WEATHERED, STRONG, MEDIUM GRAINED, LAMINATED, COAL STRINGERS.			673.0	98																
SANDSTONE , GRAY, MODERATELY WEATHERED, STRONG, MEDIUM GRAINED, LAMINATED, COAL STRINGERS.			672.0	99																
SHALE , GRAY, HIGHLY WEATHERED, WEAK, VERY FINE GRAINED, THINLY LAMINATED, CARBONACEOUS.				100																
VOID.				101																
VOID.				102																
VOID.				103																
VOID.				104																
VOID.				105	0		15	NQ-6										CORE		
VOID.				106																
VOID.				107																
VOID.				108																
VOID.				109																
UNDERCLAY , GRAY, SEVERELY WEATHERED, VERY WEAK, VERY FINE GRAINED, THINLY LAMINATED, ARGILLACEOUS.			663.5	110																
UNDERCLAY , GRAY, SEVERELY WEATHERED, VERY WEAK, VERY FINE GRAINED, THINLY LAMINATED, ARGILLACEOUS.			662.4	111																
SANDSTONE , GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, LAMINATED, SHALE STRINGERS.				112	89		100	NQ-7										CORE		
SANDSTONE , GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, LAMINATED, SHALE STRINGERS.			658.5	113																
SANDSTONE , GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, LAMINATED, SHALE STRINGERS.				114																
EOB																				

NOTES: VOID ENCOUNTERED FROM 101.0' TO 109.5'. BORING SEALED AT 67 FEET BELOW GROUND SURFACE
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; BENTONITE GROUT; BENTONITE PELLETS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 8/25/20 11:58 - C:\USERS\PC\CHOCKIDESKTOP\JEF-7-25.70 FINAL COMBINED BORING LOGS.GPJ

PID: 109848		SFN:		PROJECT: JEF-7-25.70		STATION / OFFSET:		START: 5/19/20		END: 5/21/20		PG 2 OF 4		B-005-0-20									
MATERIAL DESCRIPTION AND NOTES			ELEV. 746.5	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	HOLE SEALED			
										GR	CS	FS	SI	CL	LL	PL	PI						
VERY STIFF TO HARD, GRAY BROWN MOTTLED, SILT AND CLAY , LITTLE TO SOME GRAVEL, LITTLE SAND, FINE TO COARSE GRAINED, DAMP TO MOIST (continued)				31	5 7 9	24	100	SS-12	4.00	-	-	-	-	-	-	-	-	15	A-6a (V)				
				32																			
				33	7 6 7	19	73	SS-13	3.25	-	-	-	-	-	-	-	-	-	-	15	A-6a (V)		
				34																			
				35	4 6 7	19	100	SS-14	3.00	22	5	9	32	32	32	18	14	16		A-6a (7)			
				36																			
				37																			
				38	6 6 8	21	100	SS-15	3.00	-	-	-	-	-	-	-	-	-	-	-	16	A-6a (V)	
				39																			
				40	9 23 17	59	67	SS-16	3.25	-	-	-	-	-	-	-	-	-	-	-	15	A-6a (V)	
41																							
42																							
43	5 8 10	27	100	SS-17	3.50	-	-	-	-	-	-	-	-	-	-	-	15	A-6a (V)					
44																							
45	5 7 9	24	100	SS-18	3.25	-	-	-	-	-	-	-	-	-	-	-	14	A-6a (V)					
46																							
47																							
48	6 7 12	28	100	SS-19	1.75	-	-	-	-	-	-	-	-	-	-	-	16	A-6a (V)					
49																							
50																							
51																							
52																							
53																							
54																							
55																							
56																							
57																							
58																							
59																							
60																							
61																							
58'-59.5'																							
Brown Orange to Gray																							
58'-59.5' Trace Coal Fragments																							
DENSE TO VERY DENSE, BROWN, GRAVEL AND STONE FRAGMENTS WITH SAND, SILT, AND CLAY , DRY			716.5																				
60	6 10 33	63	100	SS-24	-	-	-	-	-	-	-	-	-	-	-	-	16	A-2-6 (V)					

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 8/25/20 11:58 - C:\USERS\PC\CHOCKIDESKTOP\JEF-7-25.70 FINAL COMBINED BORING LOGS.GPJ

PID: 109848		SFN:		PROJECT: JEF-7-25.70		STATION / OFFSET:		START: 5/19/20		END: 5/21/20		PG 4 OF 4		B-005-0-20						
MATERIAL DESCRIPTION AND NOTES			ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	HOLE SEALED
										GR	CS	FS	SI	CL	LL	PL	PI			
			682.2																	
COAL, BLACK, MODERATELY TO HIGHLY WEATHERED, VERY WEAK TO WEAK, VERY FINE GRAINED, LAMINATED, CARBONACEOUS.			681.1	95																
COAL, BLACK, MODERATELY TO HIGHLY WEATHERED, VERY WEAK TO WEAK, VERY FINE GRAINED, LAMINATED, CARBONACEOUS.			678.5	96																
SANDSTONE, DARK GRAY, MODERATELY WEATHERED, STRONG, VERY FINE GRAINED, LAMINATED, MICACEOUS, SLIGHTLY FRACTURED.			675.2	97																
SANDSTONE, DARK GRAY, MODERATELY WEATHERED, STRONG, VERY FINE GRAINED, LAMINATED, MICACEOUS, SLIGHTLY FRACTURED.			673.8	98																
SANDSTONE, DARK GRAY, MODERATELY WEATHERED, STRONG, VERY FINE GRAINED, LAMINATED, MICACEOUS, SLIGHTLY FRACTURED.			675.2	99																
SHALE, DARK GRAY, SEVERELY TO HIGHLY WEATHERED, WEAK, VERY FINE GRAINED, THINLY LAMINATED, CARBONACEOUS.			673.8	100	65		100	NQ										CORE		
SHALE, DARK GRAY, SEVERELY TO HIGHLY WEATHERED, WEAK, VERY FINE GRAINED, THINLY LAMINATED, CARBONACEOUS.			671.1	101																
COAL, BLACK, MODERATELY TO HIGHLY WEATHERED, VERY WEAK TO WEAK, VERY FINE GRAINED, LAMINATED, CARBONACEOUS.			671.1	102																
COAL, BLACK, MODERATELY TO HIGHLY WEATHERED, VERY WEAK TO WEAK, VERY FINE GRAINED, LAMINATED, CARBONACEOUS.			671.1	103																
COAL, BLACK, MODERATELY TO HIGHLY WEATHERED, VERY WEAK TO WEAK, VERY FINE GRAINED, LAMINATED, CARBONACEOUS.			671.1	104																
UNDERCLAY, GRAY, SEVERELY WEATHERED, WEAK, VERY FINE GRAINED, THINLY LAMINATED, ARGILLACEOUS.			667.7	105																
UNDERCLAY, GRAY, SEVERELY WEATHERED, WEAK, VERY FINE GRAINED, THINLY LAMINATED, ARGILLACEOUS.			667.7	106																
UNDERCLAY, GRAY, SEVERELY WEATHERED, WEAK, VERY FINE GRAINED, THINLY LAMINATED, ARGILLACEOUS.			667.7	107																
UNDERCLAY, GRAY, SEVERELY WEATHERED, WEAK, VERY FINE GRAINED, THINLY LAMINATED, ARGILLACEOUS.			667.7	108																
SANDSTONE, GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN BEDDED, INTACT.			667.7	109																
SANDSTONE, GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN BEDDED, INTACT.			667.7	110	82		96	NQ										CORE		
SANDSTONE, GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN BEDDED, INTACT.			667.7	111																
SANDSTONE, GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN BEDDED, INTACT.			667.7	112																
SANDSTONE, GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN BEDDED, INTACT.			667.7	113																
SANDSTONE, GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN BEDDED, INTACT.			667.7	114																
SANDSTONE, GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN BEDDED, INTACT.			667.7	115																
SANDSTONE, GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN BEDDED, INTACT.			667.7	116	95		95	NQ										CORE		
SANDSTONE, GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN BEDDED, INTACT.			659.5	117																
				EOB																

NOTES: BORING SEALED

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; BENTONITE GROUT; BENTONITE PELLETS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 8/25/20 11:58 - C:\USERS\PC\ICHOCKID\DESKTOP\JEF-7-25.70 FINAL COMBINED BORING LOGS.GPJ

PID: 109848		SFN:		PROJECT: JEF-7-25.70		STATION / OFFSET:		START: 6/2/20		END: 6/2/20		PG 3 OF 4		B-006-0-20							
MATERIAL DESCRIPTION AND NOTES			ELEV. 709.7	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	HOLE SEALED	
										GR	CS	FS	SI	CL	LL	PL	PI				
VERY STIFF TO HARD, BROWN GRAY MOTTLED, SILT AND CLAY , SOME GRAVEL, LITTLE SAND, FINE TO COARSE GRAINED, DAMP TO MOIST (continued)			699.4	63	50/4"	-	100	SS-25	-	-	-	-	-	-	-	-	-	7	A-6a (V)		
				64																	
				65	11	85	80	SS-26	-	-	-	-	-	-	-	-	-	-	-	14	A-6a (V)
				66	21 37																
				67																	
VERY DENSE, BROWN, COARSE AND FINE SAND , SOME CLAY, LITTLE TO SOME GRAVEL, AND STONE FRAGMENTS, DAMP TO MOIST			697.8	68	7	57	93	SS-27	4.5+	-	-	-	-	-	-	-	-	14	A-6a (V)		
				69	14 25																
SANDSTONE , GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, VERY THIN TO THIN BEDDED, ARGILLACEOUS.			694.4	70	6	43	100	SS-28	4.5+	-	-	-	-	-	-	-	-	11	A-6a (V)		
				71	10 19																
SHALE , GRAY, SEVERELY TO HIGHLY WEATHERED, VERY WEAK, VERY FINE GRAINED, THINLY LAMINATED.			688.3	72	9	-	100	SS-29	-	-	-	-	-	-	-	-	-	10	A-3 (V)		
				73	50/5"																
COAL , BLACK, HIGHLY WEATHERED, WEAK, VERY FINE GRAINED, LAMINATED, FRIABLE.			687.6	74																	
				75																	
SHALE , GRAY TO BLACK, HIGHLY WEATHERED, WEAK, VERY FINE GRAINED, THINLY LAMINATED, CARBONACEOUS.			680.1	76																	
				77	70	100	NQ													CORE	
COAL , BLACK, HIGHLY WEATHERED, WEAK, VERY FINE GRAINED, THINLY LAMINATED.			680.1	78																	
				79																	
COAL , BLACK, HIGHLY WEATHERED, WEAK, VERY FINE GRAINED, THINLY LAMINATED.			680.1	80																	
				81																	
COAL , BLACK, HIGHLY WEATHERED, WEAK, VERY FINE GRAINED, THINLY LAMINATED.			680.1	82																	
				83																	
COAL , BLACK, HIGHLY WEATHERED, WEAK, VERY FINE GRAINED, THINLY LAMINATED.			680.1	84																	
				85	82	95	NQ													CORE	
COAL , BLACK, HIGHLY WEATHERED, WEAK, VERY FINE GRAINED, THINLY LAMINATED.			680.1	86																	
				87																	
COAL , BLACK, HIGHLY WEATHERED, WEAK, VERY FINE GRAINED, THINLY LAMINATED.			680.1	88																	
				89																	
COAL , BLACK, HIGHLY WEATHERED, WEAK, VERY FINE GRAINED, THINLY LAMINATED.			680.1	90																	
				91																	
COAL , BLACK, HIGHLY WEATHERED, WEAK, VERY FINE GRAINED, THINLY LAMINATED.			680.1	92																	
				93																	
COAL , BLACK, HIGHLY WEATHERED, WEAK, VERY FINE GRAINED, THINLY LAMINATED.			680.1	94																	
				95																	





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STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 8/25/20 11:58 - C:\USERS\PC\CHOCKIDESKTOP\JEF-7-25.70 FINAL COMBINED BORING LOGS.GPJ

PID: 109848		SFN:		PROJECT: JEF-7-25.70		STATION / OFFSET:		START: 6/2/20		END: 6/2/20		PG 4 OF 4		B-006-0-20								
MATERIAL DESCRIPTION AND NOTES			ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	HOLE SEALED		
										GR	CS	FS	SI	CL	LL	PL	PI					
<p>SANDSTONE, DARK GRAY TO GRAY, SLIGHTLY TO MODERATELY WEATHERED, STRONG, FINE TO MEDIUM GRAINED, THIN BEDDED.</p> <p>SHALE, DARK GRAY, HIGHLY WEATHERED, WEAK, VERY FINE GRAINED, THINLY LAMINATED.</p> <p>COAL, BLACK, HIGHLY WEATHERED, WEAK, VERY FINE GRAINED, THINLY LAMINATED.</p> <p>SHALE, GRAY, SEVERELY TO HIGHLY WEATHERED, WEAK, VERY FINE GRAINED, THINLY LAMINATED, ARENACEOUS, ARGILLACEOUS.</p>			677.6																			
			677.3	95	68		100	NQ												CORE		
			673.5	96																		
			672.9	97																		
<p>SHALE, GRAY, SEVERELY TO HIGHLY WEATHERED, WEAK, VERY FINE GRAINED, THINLY LAMINATED, ARENACEOUS, ARGILLACEOUS.</p>			668.6	98																		
				99																		
				100																		
				101																		
				102																		
				103																		
				104																		
				105	46		89	NQ													CORE	
				106																		
				107																		
	108																					
	109																					
			662.5	EOB																		

NOTES: BORING SEALED
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; BENTONITE GROUT; BENTONITE PELLETS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 8/25/20 11:58 - C:\USERS\PC\CHOCKIDESKTOP\JEF-7-25.70 FINAL COMBINED BORING LOGS.GPJ

PID: 109848		SFN:		PROJECT: JEF-7-25.70		STATION / OFFSET:		START: 5/21/20		END: 5/27/20		PG 4 OF 4		B-007-0-20						
MATERIAL DESCRIPTION AND NOTES			ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	PIEZ.
										GR	CS	FS	SI	CL	LL	PL	PI			
COAL , BLACK, HIGHLY WEATHERED, WEAK, FINE GRAINED, LAMINATED, ARENACEOUS, FRIABLE. <i>(continued)</i>			681.8	95	55		100	NQ										CORE		
			679.1	96																
SANDSTONE , DARK GRAY, MODERATELY WEATHERED, MODERATELY STRONG TO STRONG, FINE TO MEDIUM GRAINED, THIN BEDDED, CARBONACEOUS.				97	29		42	NQ										CORE		
			675.1	98																
SHALE , BLACK, MODERATELY WEATHERED, WEAK, VERY FINE GRAINED, THINLY LAMINATED, CARBONACEOUS.			674.8	99																
COAL , BLACK, HIGHLY WEATHERED, WEAK, FINE GRAINED, LAMINATED.			672.6	100																
VOID.				101	88		98	NQ										CORE		
			666.8	102																
UNDERCLAY , GRAY, SEVERELY WEATHERED, VERY WEAK, VERY FINE GRAINED, THINLY LAMINATED, ARGILLACEOUS.			666.1	103																
SANDSTONE , GRAY, SLIGHTLY WEATHERED, VERY STRONG, FINE TO MEDIUM GRAINED, THIN BEDDED.				104																
			661.1	105																
				106																
				107	110	111	112	113	114	115	EOB									

NOTES: VOID ENCOUNTERED FROM 103.5' TO 109.3'. INSTRUMENT INSTALLED AT 88.1'
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; BENTONITE GROUT; BENTONITE PELLETS; CEMENT



The Ohio Department of Transportation

Office of Geotechnical Engineering

PROJECT JEF-7-25.7	DISTRICT No.: 11	PID No 109848	Tech: BP
Point Load Strength Calc $I_s = P / (D_c^2)$ $D_c^2 = 4A/\pi$ $A = (WD)$ Strength = $I_s * K$ $K = 12$ Sample Preservation Method As received			

Boring #	Sample Depth (ft)	Material Type	Test Type	Moist Cont.	W (in)	W (mm)	D (in)	D (mm) Initial	D (mm) Final	D (mm) Avg	L/D	P: Failure Load (kN)	I_{s50} (MPa)	I_{s50} (psi)	Strength S_c (MPa)	Strength S_c (psi)
B-001-0-19	92.0'-93.0'	SH	a	ar	1.97	50	0.81	25	16	20.5	0.410	0.872	0.67	97	8	1163
B-001-0-19	92.0'-93.0'	SH	a	ar	1.97	50	0.83	24	18	21.0	0.420	1.588	1.19	172	14	2067
B-001-0-19	92.0'-93.0'	SH	a	ar	1.97	50	1.02	29	23	26.0	0.520	1.47	0.89	129	11	1545
B-001-0-19	92.0'-93.0'	SH	a	ar	1.97	50	0.71	23	13	18.0	0.360	0.617	0.54	78	6	937
B-001-1-19	92.0'-93.0'	SH	a	ar	1.97	50	0.49	15	10	12.5	0.250	0.47	0.59	86	7	1028
B-001-0-19	92.0'-93.0'	SH	a	ar	1.97	50	0.91	26	20	23.0	0.460	1.294	0.88	128	11	1538
B-001-0-19	92.0'-93.0'	SH	a	ar	1.97	50	0.61	18	13	15.5	0.310	0.843	0.85	124	10	1486
B-001-0-19	92.0'-93.0'	SH	a	ar	1.97	50	0.67	20	14	17.0	0.340	0.686	0.63	92	8	1103
B-001-0-19	92.0'-93.0'	SH	a	ar	1.97	50	0.71	21	15	18	0.360	1.01	0.88	128	11	1534
B-001-0-19	92.0'-93.0'	SH	a	ar	1.97	50	0.65	19	14	16.5	0.330	0.558	0.53	77	6	924
Average Strength															1292	

Comments: Test Type: a: axial, d: diametrical; b: block; i: irregular; ⊥: perpendicular; //: parallel
 Rock Type: SS: Sandstone; SH: Shale; LS: Limestone; CLS: Claystone; BLDR: Boulder Moist. Cont.: s: saturated; ar: as received; ad: air dried; od: oven dried (%)

Sc calculated utilizing average value with high and low test excluded.



JEF - 7 - 25.7
90.0 - 92.0

B-001-1-19



JEF - 7 - 25.7

92.0 - 102.0

B-001-1-19



3EF. 7. 25.7
102.0 - 112.0

B-001-1-19



JEF -7 - 25.7



112.0 - 122.0

B-001-1-19



		Date: 6/6/19
		Photographer: BKS
1	Location / Orientation	B-001-2-19
	Remarks	78.0' – 88.0'
		Date: 6/6/19
		Photographer: BKS
2	Location / Orientation	B-001-2-19
	Remarks	88.0' – 98.0'



		Date: 6/6/19
		Photographer: BKS
3	Location / Orientation	B-001-2-19
	Remarks	98.0' – 108.0'
		Date: 6/6/19
		Photographer: BKS
4	Location / Orientation	B-001-2-19
	Remarks	108.0' – 118.0'



Date: 6/7/19

Photographer: BKS

5	Location / Orientation	B-002-0-19
	Remarks	93.5' – 103.9'


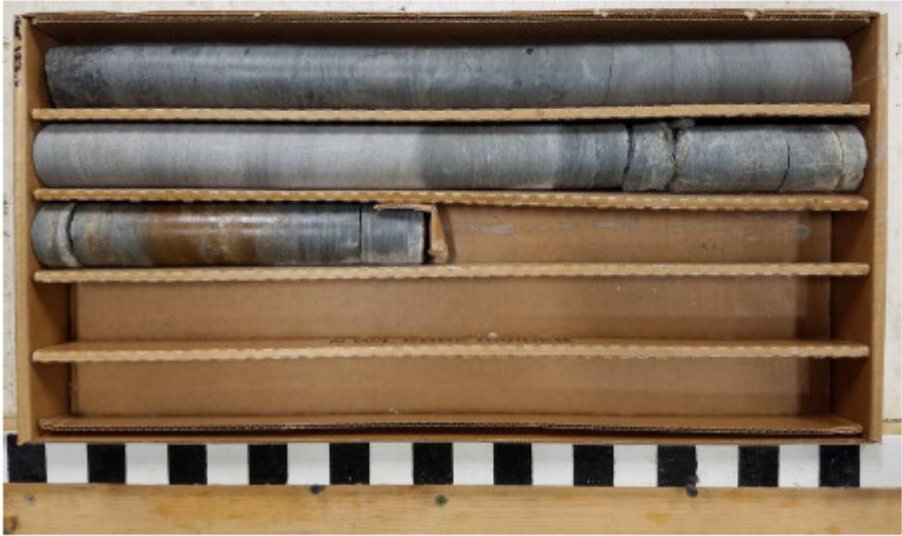


Date: 6/7/19

Photographer: BKS

6	Location / Orientation	B-002-0-19
	Remarks	103.9' – 109.5'



		Date: 6/7/19
		Photographer: BKS
7	Location / Orientation	B-002-0-19
	Remarks	109.5' - 119.5'
		Date: 6/7/19
		Photographer: BKS
8	Location / Orientation	B-002-0-19
	Remarks	119.5' - 124.5'



		Date: 6/6/19
		Photographer: BKS
9	Location / Orientation	B-003-0-19
	Remarks	113.5' - 123.5'
<div style="border: 1px solid black; height: 150px; width: 100%;"></div>		Date:
		Photographer:
10	Location / Orientation	
	Remarks	

JEF-7-25.70 Bedrock Core Photo Log



Boring: B-004-0-20 Depth: 67' to 86.5' Box: 1 of 3



Boring: B-004-0-20 Depth: 86.5' to 110.8' Box: 2 of 3

JEF-7-25.70 Bedrock Core Photo Log



Boring: B-004-0-20 Depth: 110.8' to 114.5' Box: 3 of 3



Boring: B-005-0-20 Depth: 88.0' to 103.0' Box: 1 of 2

JEF-7-25.70 Bedrock Core Photo Log



Boring: B-005-0-20 Depth: 103.0' to 117.0' Box: 2 of 2



Boring: B-006-0-20 Depth: 74.1' to 89.8' Box: 1 of 3

JEF-7-25.70 Bedrock Core Photo Log



Boring: B-006-0-20 Depth: 89.8' to 105.8' Box: 2 of 3



Boring: B-006-0-20 Depth: 105.8' to 109.4' Box: 3 of 3

JEF-7-25.70 Bedrock Core Photo Log



Boring: B-007-0-20 Depth: 88.1' to 103.1' Box: 1 of 2



Boring: B-007-0-20 Depth: 103.1' to 115.0' Box: 2 of 2

JEF-7-25.70 Bedrock Core Photo Log



Boring: B-008-0-20 Depth: 102.0' to 109.0' Box: 1 of 1