



CUY-90-14.90

PID 82119

APPENDIX GE-07

**CCG1 Soil Boring Logs
(Reference Document)**

State of Ohio
Department of Transportation
Jerry Wray, Director

**Innerbelt Bridge
Construction Contract Group 2 (CCG2)**



Shannon & Wilson, Inc.

KEY TO SYMBOLS

















PROJECT CLEVELAND CENTRAL VIADUCT

PID 85531



OGE NUMBER 9999

PROJECT TYPE Bridge Replacement




LITHOLOGIC SYMBOLS (Unified Soil Classification System)

-  A-1-A: Ohio DOT: A-1-a, gravel and/or stone fragments
-  A-1-B: Ohio DOT: A-1-b, gravel and/or stone fragments with sand
-  A-2-4: Ohio DOT: A-2-4, gravel and/or stone fragments with sand and silt
-  A-2-7: Ohio DOT: A-2-7, gravel and/or stone fragments with sand, silt and clay
-  FS A-3: Ohio DOT: A-3, fine sand
-  A-3A: Ohio DOT: A-3a, coarse and fine sand
-  A-4A: Ohio DOT: A-4a, sandy silt
-  A-4B: Ohio DOT: A-4b, silt
-  A-6A: Ohio DOT: A-6a, silt and clay
-  A-6B: Ohio DOT: A-6b, silty clay
-  A-7-6: Ohio DOT: A-7-6, clay
-  A-8B: Ohio DOT: A-8b, organic clay
-  PAVEMENT OR BASE: Ohio DOT: Pavement or Aggregate base
-  SHALE: Ohio DOT: Shale
-  TOPSOIL: Ohio DOT: Sod and Topsoil
-  UNCONTROLLED FILL: Ohio DOT: Uncontrolled Fill

SAMPLER SYMBOLS

-  Bulk Auger or Bag Sample
-  Thin Walled Undisturbed Sample

WELL CONSTRUCTION SYMBOLS

-  Cement Seal with Instrument Cable
-  Cement: Bottom of hole
-  Instrument in Filter Pack

ABBREVIATIONS

- | | |
|--------------------------------------|---|
| LL - LIQUID LIMIT (%) | TV - TORVANE |
| PI - PLASTIC INDEX (%) | PID - PHOTOIONIZATION DETECTOR |
| W - MOISTURE CONTENT (%) | UC - UNCONFINED COMPRESSION |
| DD - DRY DENSITY (PCF) | ppm - PARTS PER MILLION |
| NP - NON PLASTIC | ▽ Water Level at Time Drilling, or as Shown |
| -200 - PERCENT PASSING NO. 200 SIEVE | ▼ Water Level at End of Drilling, or as Shown |
| PP - POCKET PENETROMETER (TSF) | ▽ Water Level After 24 Hours, or as Shown |

KEY TO SYMBOLS - OH DOT.GDT - 11/16/12 06:39 - D:\WP\21-1121-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL\21-21361_CURRENT.GPJ

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 06:59 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PROJECT: CLEVELAND CENTRAL VIADUCT		DRILLING FIRM / OPERATOR: PRO GEOTECH / FAY		DRILL RIG: MOBILE B-57		STATION / OFFSET: 119+44, 57.0 LT		EXPLORATION ID: B-022-2-10										
TYPE: BRIDGE REPLACEMENT		SAMPLING FIRM / LOGGER: S&W / BAYLEY		HAMMER: MOBILE AUTOMATIC		ALIGNMENT: CENTERLINE		PAGE 1 OF 4										
PID: 85531 BR ID:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/14/11		ELEVATION: 653.9 (MSL) EOB: 183.6 ft.												
START: 11/16/10 END: 11/21/10		SAMPLING METHOD: SPT / ST		ENERGY RATIO (%): 81.3		COORD: 662502.480 N, 2189667.480 E												
MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			ODOT CLASS (GI)	PIEZ.	
								GR	CS	FS	SI	CL	LL	PL	PI			WC
SOFT TO MEDIUM STIFF, DARK BROWN, FINE SAND, SLIGHTLY CLAYEY, SILTY, MOIST FILL VERY LOOSE, BROWN, COARSE AND FINE SAND GRAVELLY GRADING TO TRACE, TRACE TO SLIGHTLY SILTY, TRACE CLAY, MOIST TO WET wet at 12.5 feet slightly fewer fines from 11.5 to 17.3 feet	653.9																	
	652.4		3	5	78	SS-S-1	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
		2.5	2	5	78	SS-S-2	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
		5.0	2	5	78	SS-S-2	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
		7.5	2	4	67	SS-S-3	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
		10.0	1	4	78	SS-S-4	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
		12.5	1	3	78	SS-S-5	-	18	37	34	-	11	-	-	-	-	19	A-3a (V)
		15.0	1	3	61	SS-S-6	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
		17.5	1	5	56	SS-S-7	-	-	-	-	-	-	-	-	-	-	-	A-4a (V)
		20.0	2	7	72	SS-S-8	-	-	-	-	-	-	-	-	-	-	-	A-4a (V)
VERY LOOSE, BROWN, SANDY SILT, WET	636.6																	
	22.5																	
	25.0		5	19	78	SS-S-9	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)
MEDIUM DENSE, GRAY, SILT, TRACE FINE SAND, WET TO MOIST	630.4																	
	27.5																	
	30.0		4	27	94	SS-S-10	-	0	0	9	-	91	-	-	-	-	20	A-4b (V)
	32.5																	
MEDIUM STIFF TO STIFF, GRAY, SILT AND CLAY, MOIST TO WET	620.4																	
	35.0		1	7	128	SS-S-11	0.75	-	-	-	-	-	-	-	-	-	-	A-6a (V)
	37.5																	
	40.0		2	14	100	SS-S-12	-	-	-	-	-	-	-	-	-	-	21	A-6a (V)
	42.5																	
MEDIUM STIFF, BROWN-GRAY, SILT, MOIST TO WET	610.4																	
	45.0		3	12	72	SS-S-13	0.75 - 2.2	-	-	-	-	-	31	21	10	21	-	A-4b (V)
STIFF, BROWN-GRAY, SILT AND CLAY, SCATTERED TO ABUNDANT SILT PARTINGS, MOIST TO WET	608.9																	
	47.5																	
			3	14	94	SS-S-14	2.0 - 2.2	-	-	-	-	-	-	-	-	-	-	A-6a (V)

Figure B-2
Sheet 1 of 4

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 06:59 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID: _____		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 119+44, 57.0 LT		START: 11/16/10		END: 11/21/10		PG 2 OF 4		B-022-2-10						
MATERIAL DESCRIPTION AND NOTES			ELEV. 603.9	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			
STIFF, BROWN-GRAY, SILT AND CLAY, SCATTERED TO ABUNDANT SILT PARTINGS, MOIST TO WET (continued)			603.9	52.5	4															
				55.0	3	18	89	SS-S-15	2.0-3.5	-	-	-	-	-	-	-	-	-	-	A-6a (V)
				60.0	4	12	106	SS-S-16	2.0-2.5	-	-	-	-	-	-	-	-	-	25	A-6a (V)
				65.0			100	ST-S-17	-	4	2	7	41	46	28	17	11	21		A-6a (8)
scattered silt partings to 63 feet			585.4	67.5																
				70.0	2	9	122	SS-S-18	0.50	-	-	-	-	30	20	10	25		A-4b (V)	
				75.0			100	ST-S-19	0.00	1	0	1	15	83	37	23	14	29		A-6a (10)
				80.0	WOH 2	7	128	SS-S-20	0.00	-	-	-	-	-	36	22	14	27		A-6a (V)
MEDIUM STIFF, GRAY, SILT, MOIST			570.9	82.5																
				85.0		104	ST-S-21	1.3-1.5	0	0	2	51	47	29	20	9	22		A-4b (8)	
MEDIUM STIFF, GRAY, SILT AND CLAY, TRACE OF SCATTERED MEDIUM SAND, MOIST TO WET			568.9	87.5	2	11	106	SS-S-22	0.75-1.0	-	-	-	-	-	-	-	-	23	A-6a (V)	
				90.0			92	ST-S-23	1.0-3.0	-	-	-	-	-	-	-	-	-	-	A-6a (V)
				95.0	4	18	100	SS-S-24	2.00	-	-	-	-	-	-	-	-	-	-	-
STIFF TO VERY STIFF, GRAY, SILT AND CLAY, ABUNDANT SLIGHTLY CLAYEY SILT LAMINAE, MOIST TO WET			560.4	97.5																
				100.0	7	34	78	SS-S-25	2.5-4.5	-	-	-	-	-	-	-	-	-	-	A-6a (V)

Figure B-2
Sheet 2 of 4

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 06:59 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT_GPJ

PID: 85531		BR ID:		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 119+44, 57.0 LT		START: 11/16/10		END: 11/21/10		PG 3 OF 4		B-022-2-10						
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			
STIFF TO VERY STIFF, GRAY, SILT AND CLAY ABUNDANT SLIGHTLY CLAYEY SILT LAMINAE, MOIST TO WET (continued)			550.3	105.0	5	26	89	SS-S-26	2.75-4.3	-	-	-	-	-	33	21	12	22	A-6a (V)	
					8					11										
VERY STIFF, GRAY-BROWN, SILT AND CLAY, TRACE OF SCATTERED SAND TO FINE GRAVEL, MOIST			545.4	110.0	6	35	89	SS-S-27	2.5-2.75	-	-	-	-	-	-	-	-	-	A-6a (V)	
					10					16										
trace brown organics to 113.5 feet			545.4	115.0	6	35	89	SS-S-28	2.5-3.0	-	-	-	-	-	-	-	-	21	A-6a (V)	
					11					15										
			545.4	120.0	6	37	89	SS-S-29	2.75-3.0	-	-	-	-	-	-	-	-	-	A-6a (V)	
					11					16										
			545.4	125.0	6	28	100	SS-S-30	1.75-2.0	-	-	-	-	-	-	-	-	-	A-6a (V)	
					9					12										
			545.4	130.0	5	24	89	SS-S-31	1.0-1.7	-	-	-	-	-	-	-	-	22	A-6a (V)	
					8					10										
			545.4	135.0	5	26	122	SS-S-32	1.5-1.6	-	-	-	-	-	-	-	-	-	A-6a (V)	
					9					10										
			545.4	140.0	3	19	72	SS-S-33	1.0-1.25	-	-	-	-	-	-	-	-	-	A-6a (V)	
					6					8										
			545.4	145.0	4	23	39	SS-S-34	0.75	-	-	-	-	-	-	-	-	-	A-6a (V)	
					7					10										
			545.4	150.0		96		ST-S-35	2.0-2.5	0	2	3	29	66	35	23	12	20	A-6a (9)	
			545.4	155.0	3	22	122	SS-S-36	1.25	-	-	-	-	-	-	-	-	-	A-6a (V)	
					7					9										

Figure B-2
Sheet 3 of 4

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 06:59 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID: _____		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 119+44, 57.0 LT		START: 11/16/10		END: 11/21/10		PG 4 OF 4		B-022-2-10						
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			
VERY STIFF, GRAY-BROWN, SILT AND CLAY, TRACE OF SCATTERED SAND TO FINE GRAVEL, MOIST (continued)			496.8	157.5	5															
				160.0	7	22	139	SS-S-37	1.50	-	-	-	-	-	-	-	-	-	-	-
HARD, BROWN AND GRAY, SANDY SILT, CLAYEY, SLIGHTLY FINE GRAVELLY, POOR DIAMICT, DAMP TO MOIST			490.2	162.5	12															
				165.0	30	108	67	SS-S-38	4.5+	-	-	-	-	-	-	-	-	-	-	-
with shale fragments to 177.5 feet				167.5																
				170.0	20	-	94	SS-S-39	4.5+	4	8	15	34	39	-	-	-	10	-	-
SHALE, BLACK, SLIGHTLY WEATHERED, VERY WEAK TO WEAK, VERY THIN TO THIN BEDDED, FISSILE.			476.4	172.5																
				175.0	18	115	67	SS-S-40	-	-	-	-	-	-	-	-	-	-	-	-
SHALE, BLACK, SLIGHTLY WEATHERED, VERY WEAK TO WEAK, VERY THIN TO THIN BEDDED, FISSILE.			470.3	177.5	100/2"	-	100	SS-S-41	-	-	-	-	-	-	-	-	-	-	-	Rock (V)
				180.0																
EOB				182.5	50/1"	-	100	SS-S-42	-	-	-	-	-	-	-	-	-	-	-	Rock (V)

NOTES: GEOKON 4500S SER#1033724 VWP INSTALLED TIP UP IN GROUT; FILTER PACK SYMBOL USED TO DEPICT INSTRUMENT LOCATION
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: USED 75 LB. BENTONITE POWDER; USED 3 BAG CEMENT; TREMIED 90 GAL. WATER

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 06:59 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PROJECT: CLEVELAND CENTRAL VIADUCT		DRILLING FIRM / OPERATOR: OHIO TEST BOR / HEPNER		DRILL RIG: SIMCO 2800 HSHT				STATION / OFFSET: 122+93, 73.0 RT				EXPLORATION ID: B-029-1-10							
TYPE: BRIDGE REPLACEMENT		SAMPLING FIRM / LOGGER: S&W / DUTT		HAMMER: SIMCO AUTOMATIC				ALIGNMENT: CENTERLINE				PAGE 1 OF 5							
PID: 85531 BR ID:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/14/11				ELEVATION: 677.5 (MSL) EOB: 218.6 ft.											
START: 12/16/10 END: 12/21/10		SAMPLING METHOD: SPT / ST		ENERGY RATIO (%): 73.5				COORD: 662822.820 N, 2189824.180 E											
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			
Concrete and Gravel base		677.5																	
LOOSE, BROWN, COARSE AND FINE SAND TRACE TO GRAVELLY, MOIST Fill		676.4	2.5	4	10	94	SS-S-1	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			5.0	3	11	89	SS-S-2	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
SOFT TO MEDIUM STIFF, BROWN, SILTY CLAY, TRACE TO SLIGHTLY, MOIST with interbedded fine sand below 8 feet		670.5	7.5	4	5	100	SS-S-3	-	-	-	-	-	-	-	-	-	-		
			10.0	2	9	100	SS-S-4	-	-	-	-	-	-	-	-	-	-	A-6b (V)	
MEDIUM DENSE, BROWN, COARSE AND FINE SAND SLIGHTLY GRAVELLY, MOIST		667.0	12.5	3	17	100	SS-S-5	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			15.0	4	17	100	SS-S-6	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			17.5	5	20	100	SS-S-7	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			20.0	5	23	100	SS-S-8	-	11	47	35	-	7	-	-	-	4	A-3a (V)	
trace gravel below 25 feet			25.0	4	17	100	SS-S-9	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			30.0	4	13	100	SS-S-10	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
wet at 33.5 feet			35.0	4	13	100	SS-S-11	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			40.0	3	17	100	SS-S-12	-	5	20	70	-	5	-	-	-	23	A-3a (V)	
			45.0	2	12	100	SS-S-13	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
MEDIUM DENSE, OLIVE-GRAY, SILT, WET		631.0	47.5	11	27	72	SS-S-14	-	-	-	-	-	-	NP	NP	NP	19	A-4b (V)	

Figure B-3
Sheet 1 of 10

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 06:59 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT_GPJ

PID: 85531		BR ID:		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 122+93, 73.0 RT		START: 12/16/10		END: 12/21/10		PG 2 OF 5		B-029-1-10						
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			
MEDIUM DENSE, OLIVE-GRAY, SILT, WET (continued)			627.5		10															
VERY STIFF, GRAY, SILT AND CLAY, MOIST TO WET			626.0	52.5	12															
				55.0	3	12	100	SS-S-15	2.00	-	-	-	-	-	-	-	-	A-6a (V)		
				57.5	4															
				60.0	6															
			616.0	60.0	10	32	89	SS-S-16	-	-	-	-	-	-	-	-	-	A-6a (V)		
				62.5	16															
DENSE, GRAY, COARSE AND FINE SAND CLAYEY, WET				65.0	10															
			611.0	65.0	12	43	100	SS-S-17	-	-	-	-	-	-	-	-	-	A-3a (V)		
				67.5	15															
MEDIUM DENSE, GRAY, SILT, MOIST TO WET				70.0	20															
			607.5	70.0	5	20	61	SS-S-18	4.5+	-	-	-	-	-	NP	NP	NP	20	A-4b (V)	
				72.5	7															
VERY STIFF, GRAY, SILT AND CLAY, MOIST				75.0	9															
				77.5	2	9	100	SS-S-19	1.25	-	-	-	-	-	-	-	-	-	A-6a (V)	
				80.0	3															
				82.5	4															
				85.0	75			ST-S-20	4.5+	-	-	-	-	-	-	-	-	-	A-6a (V)	
				87.5																
				90.0	5	20	100	SS-S-21	1.50	-	-	-	-	-	-	-	-	24	A-6a (V)	
				92.5	7															
				95.0	9															
			586.0	90.0	4	16	100	SS-S-22	1.50	-	-	-	-	-	-	-	-	-	A-6a (V)	
				92.5	5															
MEDIUM STIFF TO STIFF, GRAY, SILTY CLAY, TRACE COARSE SAND AND SHALE FRAGMENTS, MOIST TO WET				95.0	8															
				97.5																
				100.0	2	11	100	SS-S-24	1.00	-	-	-	-	-	-	-	-	-	A-6b (V)	
				102.5	3															
			576.0	100.0	6															
SOFT TO MEDIUM STIFF, GRAY, CLAY, MOIST TO WET																				

Figure B-3
Sheet 2 of 10

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 06:59 - D:\WIP\21-121-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID:		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 122+93, 73.0 RT		START: 12/16/10		END: 12/21/10		PG 3 OF 5		B-029-1-10											
MATERIAL DESCRIPTION AND NOTES				ELEV. 574.0	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			ODOT CLASS (GI)	PIEZ.					
											GR	CS	FS	SI	CL	LL	PL	PI			WC				
SOFT TO MEDIUM STIFF, GRAY, CLAY , MOIST TO WET <i>(continued)</i>				574.0	105.0	WOH 2	5	100	SS-S-25	0.25	-	-	-	-	-	41	26	15	31	A-7-6 (V)					
					107.5																				
					110.0			79	100	ST-S-26	1.00	-	-	-	-	-	-	-	-	-		-	-	A-7-6 (V)	
					112.5																				
VERY STIFF, GRAY, SILT AND CLAY , MOIST				559.5	115.0	WOH WOH 4	5	100	SS-S-27	0.75	-	-	-	-	-	-	-	-	-	A-7-6 (V)					
					117.5																				
STIFF, GRAY, SILT , SLIGHTLY CLAYEY, MOIST				549.0	120.0	5 8 11	23	100	SS-S-28	2.50	-	-	-	-	-	-	-	-	-	21	A-6a (V)				
					122.5																				
VERY STIFF TO HARD, GRAY, SILT AND CLAY , SCATTERED TRACE GRAVEL, SCATTERED SILT LAYERS, MOIST				547.5	125.0	6 9 12	26	100	SS-S-29	2.50	-	-	-	-	-	-	-	-	-	-	A-6a (V)				
					127.5																				
VERY STIFF TO HARD, GRAY, SILT AND CLAY , SCATTERED TRACE GRAVEL, SCATTERED SILT LAYERS, MOIST				547.5	130.0	3 5 8	16	100	SS-S-30	2.00	-	-	-	-	-	29	20	9	24	A-4b (V)					
					132.5																				
VERY STIFF TO HARD, GRAY, SILT AND CLAY , SCATTERED TRACE GRAVEL, SCATTERED SILT LAYERS, MOIST				547.5	135.0	9 14 21	43	100	SS-S-31	2.50	-	-	-	-	-	-	-	-	-	-	A-6a (V)				
					137.5																				
VERY STIFF TO HARD, GRAY, SILT AND CLAY , SCATTERED TRACE GRAVEL, SCATTERED SILT LAYERS, MOIST				547.5	140.0	9 15 22	45	100	SS-S-32	2.50	-	-	-	-	-	-	-	-	-	-	A-6a (V)				
					142.5																				
VERY STIFF TO HARD, GRAY, SILT AND CLAY , SCATTERED TRACE GRAVEL, SCATTERED SILT LAYERS, MOIST				547.5	145.0	8 13 17	37	100	SS-S-33	2.50	-	-	-	-	-	-	-	-	-	-	A-6a (V)				
					147.5																				
VERY STIFF TO HARD, GRAY, SILT AND CLAY , SCATTERED TRACE GRAVEL, SCATTERED SILT LAYERS, MOIST				547.5	150.0	7 13 19	39	100	SS-S-34	2.50	-	-	-	-	-	32	21	11	20	A-6a (V)					
					152.5																				
VERY STIFF TO HARD, GRAY, SILT AND CLAY , SCATTERED TRACE GRAVEL, SCATTERED SILT LAYERS, MOIST				547.5	155.0	7 13 18	38	100	SS-S-35	2.25	-	-	-	-	-	-	-	-	-	-	A-6a (V)				

Figure B-3
Sheet 3 of 10

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 06:59 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT_GPJ

PID: 85531		BR ID:		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 122+93, 73.0 RT		START: 12/16/10		END: 12/21/10		PG 4 OF 5		B-029-1-10													
MATERIAL DESCRIPTION AND NOTES				ELEV. 520.4	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									
VERY STIFF TO HARD, GRAY, SILT AND CLAY , SCATTERED TRACE GRAVEL, SCATTERED SILT LAYERS, MOIST (continued)				489.5	157.5	7	37	100	SS-S-36	2.25	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)					
					160.0	7 13 17																					
					162.5	7	36	100	SS-S-37	2.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)		
					165.0	7 12 17																					
					167.5	6	29	100	SS-S-38	2.50	-	-	-	-	-	-	-	-	-	-	-	-	23	-	A-6a (V)		
					170.0	6 11 13																					
					172.5	7	34	100	SS-S-39	2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
					175.0	7 11 17																					
					177.5	5	27	100	SS-S-40	1.75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
					180.0	5 10 12																					
182.5	7	26	100	SS-S-41	1.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	29	A-6a (V)					
185.0	7 9 12																										
187.5	10	59	94	SS-S-42	-	14	9	10	-	67	-	26	17	9	15	-	-	-	-	-	A-4 (6)						
190.0	10 19 29																										
192.5	12	77	89	SS-S-43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-4a (V)					
195.0	12 24 39																										
197.5	17	77	89	SS-S-44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-4a (V)					
200.0	17 24 39																										
202.5	5	18	100	SS-S-45	1.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	A-7-6 (V)				
205.0	5 6 9																										
207.5	25	-	100	SS-S-46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-4a (V)				
210.0	25 50/3"																										
SHALE , GRAY, WEAK TO SLIGHTLY STRONG.				468.2	TR																						

Figure B-3
Sheet 4 of 10

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 06:59 - D:\WP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT_GPJ

PID: 85531		BR ID:		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 122+93, 73.0 RT		START: 12/16/10		END: 12/21/10		PG 5 OF 5		B-029-1-10						
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			
SHALE , GRAY, WEAK TO SLIGHTLY STRONG. <i>(continued)</i>			466.9																	
					-212.5	50/1"	-	100	SS-S-47	-	-	-	-	-	-	-	-	-	-	-
			458.9	EOB																
					-217.5	50/1"	-	100	SS-S-48	-	-	-	-	-	-	-	-	-	-	-

NOTES: GEOKON 4500S SER#1030837 VWP INSTALLED TIP UP IN GROUT; FILTER PACK SYMBOL USED TO DEPICT INSTRUMENT LOCATION
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: USED 150 LB. BENTONITE POWDER; USED 6 BAG CEMENT; TREMIED 90 GAL. WATER

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT. GDT - 2/12/13 07:00 - D:\WP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PROJECT: CLEVELAND CENTRAL VIADUCT		DRILLING FIRM / OPERATOR: PRO GEOTECH / FAY		DRILL RIG: MOBILE B-57		STATION / OFFSET: 125+18, 88.0 LT		EXPLORATION ID: B-033-1-10											
TYPE: BRIDGE REPLACEMENT		SAMPLING FIRM / LOGGING: S&W / GUENTHER/BUSH		HAMMER: MOBILE AUTOMATIC		ALIGNMENT: CENTERLINE		PAGE 1 OF 5											
PID: 85531 BR ID:		DRILLING METHOD: 3.25" HSA / NQ2		CALIBRATION DATE: 1/14/11		ELEVATION: 682.5 (MSL) EOB: 228.5 ft.													
START: 12/28/10 END: 1/3/11		SAMPLING METHOD: SPT / ST		ENERGY RATIO (%): 81.3		COORD: 663072.300 N, 2189758.890 E													
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.
									GR	CS	FS	SI	CL	LL	PL	PI			
TOPSOIL, DAMP		682.5																	
STIFF, DARK BROWN, SANDY SILT, TRACE GRAVEL, GRADES TO MEDIUM STIFF AT 3 FEET., MOIST Fill		682.3	2.5	6	14	11	SS-S-1	-	-	-	-	-	-	-	-	-	-	-	A-4a (V)
				7															
				3															
		677.0	5.0	1	3	67	SS-S-2	-	-	-	-	-	-	-	-	-	-	-	A-4a (V)
VERY LOOSE TO LOOSE, BROWN, COARSE AND FINE SAND, TRACE GRAVEL TO GRAVELLY, TRACE FINES, DAMP TO MOIST				1															
				1	4	67	SS-S-3	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
				2															
				1															
				2	5	94	SS-S-4	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
				2															
				2	7	67	SS-S-5	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
				2															
				2	5	83	SS-S-6	-	42	33	19	-	6	-	-	-	-	9	A-3a (V)
				2															
				2	4	83	SS-S-7	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
				2															
				2	4	83	SS-S-7	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
				3															
				3	9	100	SS-S-8	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
				3															
		659.5	22.5																
LOOSE, BROWN, SILT, TRACE FINE SAND, DAMP		657.5	25.0	1	14	92	SS-S-9	3.75	-	-	-	-	-	NP	NP	NP	20	-	A-4b (V)
				4															
MEDIUM DENSE, BROWN, COARSE AND FINE SAND TRACE FINES, TRACE GRAVEL AND STONE FRAGMENTS, DAMP				6															
				7	24	83	SS-S-10	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
				8															
				10															
				7															
				4	22	94	SS-S-11	-	0	4	90	-	6	-	-	-	-	5	A-3a (V)
				7															
wet at 39.5 feet				9															
				6	23	89	SS-S-12	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
				8															
				9															
		639.5	42.5																
MEDIUM DENSE, GRAY, SILT, TRACE FINE SAND, WET				4	16	89	SS-S-13	-	-	-	-	-	-	-	-	-	-	26	A-4b (V)
				6															
		634.5	47.5																
MEDIUM DENSE TO DENSE, GRAY, FINE SAND, TRACE TO SLIGHTLY SILTY, MOIST TO WET				12	56	83	SS-S-14	-	-	-	-	-	-	-	-	-	-	-	A-3 (V)

Figure B-4
Sheet 1 of 16

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:00 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID:		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 125+18, 88.0 LT		START: 12/28/10		END: 1/3/11		PG 2 OF 5		B-033-1-10						
MATERIAL DESCRIPTION AND NOTES			ELEV.	DEPTH	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.
										GR	CS	FS	SI	CL	LL	PL	PI			
MEDIUM DENSE TO DENSE, GRAY, FINE SAND, TRACE TO SLIGHTLY SILTY, MOIST TO WET (continued)			632.5	52.5	19															
					22															
DENSE, GRAY, SILT, TRACE FINE SAND, MOIST			624.5	55.0	2	26	94	SS-S-15	-	-	-	-	-	-	-	-	22	A-3 (V)		
					8															
DENSE, GRAY, SILT, TRACE FINE SAND, MOIST			614.0	60.0	8	42	100	SS-S-16	-	-	-	-	-	-	-	-	-	A-4b (V)		
					13															
MEDIUM STIFF TO STIFF, GRAY, CLAYEY SILT, TRACE SAND, MOIST			614.0	62.5	12	45	100	SS-S-17	-	-	-	-	-	NP	NP	NP	20	A-4b (V)		
					17															
MEDIUM STIFF TO STIFF, GRAY, CLAYEY SILT, TRACE SAND, MOIST			614.0	65.0	12	45	100	SS-S-17	-	-	-	-	-	NP	NP	NP	20	A-4b (V)		
					17															
MEDIUM STIFF TO STIFF, GRAY, CLAYEY SILT, TRACE SAND, MOIST			614.0	70.0	3	9	100	SS-S-18	1.00	-	-	-	-	-	-	-	-	A-4b (V)		
					3															
MEDIUM STIFF TO STIFF, GRAY, CLAYEY SILT, TRACE SAND, MOIST			614.0	75.0			100	ST-S-19	1.00	-	-	-	-	-	-	-	-	A-4b (V)		
MEDIUM STIFF TO STIFF, GRAY, CLAYEY SILT, TRACE SAND, MOIST			614.0	80.0	4	26	100	SS-S-20	3.50	-	-	-	-	28	21	7	19	A-4b (V)		
					8															
VERY STIFF, GRAY, SILT AND CLAY, TRACE SAND, MOIST			599.5	85.0	5	28	100	SS-S-21	3.00	-	-	-	-	-	-	-	-	A-6a (V)		
					9															
VERY STIFF, GRAY, SILT AND CLAY, TRACE SAND, MOIST			599.5	90.0	5	24	89	SS-S-22	4.50	-	-	-	-	-	-	-	-	A-6a (V)		
					7															
VERY STIFF, GRAY, SILT AND CLAY, TRACE SAND, MOIST			599.5	92.5																
SOFT TO MEDIUM STIFF, GRAY, CLAY, TRACE SILT, TRACE SAND, MOIST			587.5	95.0	2	9	100	SS-S-23	0.50	-	-	-	-	30	19	11	26	A-6a (V)		
					3															
SOFT TO MEDIUM STIFF, GRAY, CLAY, TRACE SILT, TRACE SAND, MOIST			587.5	97.5																
SOFT TO MEDIUM STIFF, GRAY, CLAY, TRACE SILT, TRACE SAND, MOIST			587.5	100.0			92	ST-S-24	0.50	-	-	-	-	-	-	-	-	A-7-6 (V)		
SOFT TO MEDIUM STIFF, GRAY, CLAY, TRACE SILT, TRACE SAND, MOIST			587.5	102.5																

Figure B-4
Sheet 2 of 16

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:00 - D:\WIP\21-121-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID:		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 125+18, 88.0 LT		START: 12/28/10		END: 1/3/11		PG 3 OF 5		B-033-1-10							
MATERIAL DESCRIPTION AND NOTES			ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.	
										GR	CS	FS	SI	CL	LL	PL	PI				
SOFT TO MEDIUM STIFF, GRAY, CLAY, TRACE SILT, TRACE SAND, MOIST (continued)			578.9	105.0	for 12"	4	100	SS-S-25	0.00	-	-	-	-	-	-	-	-	-	A-7-6 (V)		
				107.5	for 12"	3															
				110.0	1 2 3	7	117	SS-S-26	0.50	-	-	-	-	-	42	25	17	32		A-7-6 (V)	
VERY SOFT, GRAY, CLAY, MOIST TO WET			569.5	112.5																	
				115.0	WOH WOH WOH	0	122	SS-S-27	0.50	-	-	-	-	-	-	-	-	-	-	A-7-6 (V)	
				120.0	WOH WOH WOH	0	100	SS-S-28	0.75	-	-	-	-	-	-	-	-	-	-	A-7-6 (V)	
STIFF TO VERY STIFF, GRAY, SILT AND CLAY WET			554.5	125.0			104	ST-S-29	1.00	-	-	-	-	-	-	-	-	-	A-7-6 (V)		
				130.0	4 6 9	20	111	ST-S-30	2.00	-	-	-	-	-	-	-	-	23		A-6a (V)	
				135.0	4 3 9	16	100	SS-S-31	2.00	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
				140.0	5 9 13	30	100	SS-S-32	3.50	-	-	-	-	-	-	-	-	-	A-6a (V)		
				145.0	6 10 12	30	100	SS-S-33	2.50	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
				150.0	5 10 12	30	103	SS-S-34	2.00	-	-	-	-	-	33	21	12	21		A-6a (V)	
				155.0	4 8 10	24	128	SS-S-35	1.25	-	-	-	-	-	-	-	-	-	A-6a (V)		

Figure B-4
Sheet 3 of 16

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:00 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID:		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 125+18, 88.0 LT		START: 12/28/10		END: 1/3/11		PG 4 OF 5		B-033-1-10									
MATERIAL DESCRIPTION AND NOTES			ELEV. 525.4	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.			
										GR	CS	FS	SI	CL	LL	PL	PI						
STIFF TO VERY STIFF, GRAY, SILT AND CLAY, WET <i>(continued)</i>			489.5	157.5	5																		
				160.0	5	11	35	131	SS-S-36	2.00	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
				162.5																			
				165.0	4	7	27	89	SS-S-37	1.50	-	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)
				167.5																			
				170.0	5	8	26	106	SS-S-38	1.50	-	-	-	-	-	-	-	-	-	-	24	-	A-6a (V)
				172.5																			
				175.0																			
				177.5																			
HARD, GRAY, SANDY SILT, "AND" CLAY, TRACE TO GRAVELLY, MOIST			489.5	180.0																			
				182.5	5	8	24	100	SS-S-39	2.00	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
				185.0	5	8	24	100	SS-S-40	1.75	-	-	-	-	-	-	-	-	-	26	-	A-6a (V)	
				187.5																			
				190.0	5	8	24	100	SS-S-40	1.75	-	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)
				192.5																			
				195.0	11	16	49	94	SS-S-41	3.00	-	-	-	-	-	-	-	-	-	-	-	-	A-4a (V)
				197.5																			
				200.0	13	21	69	67	SS-S-42	-	5	7	12	38	38	23	16	7	13	-	-	-	A-4a (8)
VERY STIFF, GRAY, CLAY, SLIGHTLY SILTY, MOIST			474.5	202.5																			
				205.0	13	27	85	72	SS-S-43	-	3	6	10	27	54	-	-	-	-	-	-	A-4a (V)	
				207.5																			
210.0	10	13	42	100	SS-S-44	3.00	-	-	-	-	-	-	-	-	-	-	-	-	-	A-7-6 (V)			

Figure B-4
Sheet 4 of 16

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:00 - D:\WP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT_PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID: _____		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 125+18, 88.0 LT		START: 12/28/10		END: 1/3/11		PG 5 OF 5		B-033-1-10					
MATERIAL DESCRIPTION AND NOTES			ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			ODOT CLASS (GI)	INST.
										GR	CS	FS	SI	CL	LL	PL	PI		
VERY STIFF, GRAY, CLAY , SLIGHTLY SILTY, MOIST <i>(continued)</i>			471.9		18														
SHALE, GRAY, SEVERELY WEATHERED.			468.0	TR	3	70	100	SS-S-45	1.00	-	-	-	-	-	-	11			
SHALE, GRAY, SLIGHTLY TO MODERATELY WEATHERED, MANY CLOSE SPACED MECHANICAL BREAKS; REC 96.5%.			465.5		12 40														
					50/2	-	100	SS-S-46	-	-	-	-	-	-	-	Rock (V)			
							95	NQ2-1	-	-	-	-	-	-	-				
							98	NQ2-2	-	-	-	-	-	-	-				
			454.0	EOB															

NOTES: PORTLAND GROUT TREMIED FROM BOTTOM, QUANTITIES NOT RECORDED
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: NOT RECORDED

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT. GDT - 2/12/13 07:00 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PROJECT: CLEVELAND CENTRAL VIADUCT		DRILLING FIRM / OPERATOR: PRO GEOTECH / FAY		DRILL RIG: MOBILE B-57		STATION / OFFSET: 124+99, 25.0 RT		EXPLORATION ID: B-033-2-10											
TYPE: BRIDGE REPLACEMENT		SAMPLING FIRM / LOGGER: S&W / GUENTHER		HAMMER: MOBILE AUTOMATIC		ALIGNMENT: CENTERLINE		PAGE 1 OF 5											
PID: 85531 BR ID:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/14/11		ELEVATION: 688.8 (MSL) EOB: 233.1 ft.													
START: 1/5/11 END: 1/10/11		SAMPLING METHOD: SPT / ST		ENERGY RATIO (%): 81.3		COORD: 663024.230 N, 2189866.930 E													
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.
									GR	CS	FS	SI	CL	LL	PL	PI			
CONCRETE		688.8																	
MEDIUM DENSE TO DENSE, BROWN, GRAVEL WITH SAND, MOIST Fill		687.6	2.5	5	31	94	SS-S-1	-	-	-	-	-	-	-	-	-	-	-	A-1-b (V)
			5.0	8	24	94	SS-S-2	-	-	-	-	-	-	-	-	-	-	-	A-1-b (V)
			7.5	9	41	100	SS-S-3	-	-	-	-	-	-	-	-	-	-	-	A-1-b (V)
			10.0	10	41	100	SS-S-4	-	-	-	-	-	-	-	-	-	-	-	A-1-b (V)
grades to loose			12.5	15	12	100	SS-S-5	-	-	-	-	-	-	-	-	-	-	-	A-1-b (V)
LOOSE, BROWN, COARSE AND FINE SAND TRACE GRAVEL, MOIST		676.3	15.0	5	11	100	SS-S-6	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
			17.5	3	7	100	SS-S-7	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
LOOSE, BROWN, GRAVEL WITH SAND MOIST		671.3	20.0	3	7	89	SS-S-8	-	-	-	-	-	-	-	-	-	-	-	A-1-b (V)
			22.5	3	12	100	SS-S-9	-	25	35	36	-	4	-	-	-	-	6	A-1-b (V)
LOOSE TO MEDIUM DENSE, BROWN, COARSE AND FINE SAND, MOIST		662.8	25.0	4	14	89	SS-S-10	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
			27.5	4	12	100	SS-S-11	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
			30.0	5	19	100	SS-S-12	-	0	27	68	-	5	-	-	-	-	4	A-3a (V)
			32.5	4	19	100	SS-S-13	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
			35.0	4	28	100	SS-S-14	-	-	-	-	-	-	-	NP	NP	NP	20	A-4b (V)
STIFF, GRAY, SILT, TRACE SAND, WITH SCATTERED SAND SEAMS, MOIST TO WET		640.8	47.5	4	8														

Figure B-5
Sheet 1 of 5

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT. GDT - 2/12/13 07:00 - D:\WP\21-121-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531 BR ID: _____ PROJECT: CLEVELAND CENTRAL VIADUCT STATION / OFFSET: 124+99, 25.0 RT START: 1/5/11 END: 1/10/11 PG 2 OF 5 B-033-2-10																		
MATERIAL DESCRIPTION AND NOTES	ELEV. 638.8	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.
								GR	CS	FS	SI	CL	LL	PL	PI			
STIFF, GRAY, SILT, TRACE SAND, WITH SCATTERED SAND SEAMS, MOIST TO WET (continued)	635.8	52.5	13															
MEDIUM DENSE, GRAY, COARSE AND FINE SAND SILTY, TRACE TO SLIGHTLY CLAYEY, MOIST TO WET	625.8	55.0	4 7 9	22	100	SS-S-15	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
		57.5	4 10 15	34	100	SS-S-16	-	0	1	82	-	17	-	-	-	22	A-3a (V)	
		62.5	7 8 13	28	100	SS-S-17	-	-	-	-	-	-	NP	NP	NP	18	A-4b (V)	
		67.5	10 12 15	37	67	SS-S-18	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
MEDIUM DENSE, GRAY, SILT, TRACE SAND, MOIST	615.8	72.5	4 4 6	14	67	SS-S-19	1.00	-	-	-	-	-	-	-	-	29	A-4b (V)	
	592.8	75.0																
		80.0			100	ST-S-20	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
		82.5	2 5 9	19	100	SS-S-21	3.00	-	-	-	-	-	29	21	8	25	A-4b (V)	
		85.0	5 8 12	27	100	SS-S-22	3.00	-	-	-	-	-	-	-	-	-	A-4b (V)	
	90.0	5 7 9	22	94	SS-S-23	2.90	-	-	-	-	-	-	-	-	-	A-4b (V)		
	92.5																	
	95.0																	
STIFF, GRAY, SILT AND CLAY, MOIST	592.8	97.5	3 4 6	14	100	SS-S-24	1.00	-	-	-	-	-	31	20	11	26	A-6a (V)	
		100.0																
		102.5																

Figure B-5
Sheet 2 of 5

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:00 - D:\WIP\21-121-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID:		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 124+99, 25.0 RT		START: 1/5/11		END: 1/10/11		PG 3 OF 5		B-033-2-10						
MATERIAL DESCRIPTION AND NOTES			ELEV.	DEPTH	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.
										GR	CS	FS	SI	CL	LL	PL	PI			
STIFF, GRAY, SILT AND CLAY, MOIST (continued)			585.2				88	ST-S-25	2.50	-	-	-	-	-	-	-	-	-	A-6b (V)	
MEDIUM STIFF, GRAY, CLAY, MOIST			580.8	105.0																
				107.5	2	9	100	SS-S-26	-	-	-	-	-	-	-	-	-	33	A-7-6 (V)	
				110.0	3															
				111.0	4															
				112.5																
				115.0		100		ST-S-27	0.75	-	-	-	-	-	-	-	-	-	A-7-6 (V)	
				117.5																
VERY SOFT, GRAY, CLAY, MOIST TO WET			570.8	117.5																
				120.0			0	100	SS-S-28	0.50	-	-	-	-	-	-	-	-	A-7-6 (V)	
				122.5																
MEDIUM STIFF, GRAY, SILT AND CLAY, MOIST TO WET			565.8	122.5	2	9	33	SS-S-29	-	-	-	-	-	38	23	15	26		A-6a (V)	
				125.0	3															
				127.5	4															
VERY STIFF, GRAY, SILT, TRACE TO SLIGHTLY CLAYEY, MOIST			560.8	127.5																
				130.0	6	33	100	SS-S-30	3.75	-	-	-	-	-	-	-	-	-	A-4b (V)	
				132.5	11															
				135.0	13															
				137.5	6	28	89	SS-S-31	4.00	-	-	-	-	-	-	-	-	-	A-4b (V)	
				140.0	9															
				142.5	12															
				145.0	6	37	94	SS-S-32	3.50	-	-	-	-	-	-	-	26		A-4b (V)	
				147.5	11															
				150.0	16															
				152.5	6	30	100	SS-S-33	4.00	-	-	-	-	-	-	-	-	-	A-4b (V)	
				155.0	5															
				157.5	9															
				160.0	13															
VERY STIFF, GRAY, SILTY CLAY, TRACE GRAVEL, MOIST			540.8	147.5	5	31	100	SS-S-34	2.50	-	-	-	-	-	-	-	23		A-6b (V)	
				150.0	9															
				152.5	14															
				155.0	5	31	100	SS-S-35	2.25	-	-	-	-	-	-	-	-	-	A-6b (V)	
				157.5	9															
				160.0	14															

Figure B-5
Sheet 3 of 5

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:00 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID: _____		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 124+99, 25.0 RT		START: 1/5/11		END: 1/10/11		PG 4 OF 5		B-033-2-10						
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.	
									GR	CS	FS	SI	CL	LL	PL	PI				
VERY STIFF, GRAY, SILT AND CLAY, MOIST		531.7	157.5	6	33	100	SS-S-36	2.50	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
		530.8	160.0	10																
			162.5	4	27	100	SS-S-37	2.50	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)
			165.0	9																
			167.5	4	27	100	SS-S-38	1.75	-	-	-	-	33	18	15	22			A-6a (V)	
			170.0	9																
			172.5	5	27	100	SS-S-39	1.25	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)
DENSE, GRAY, COARSE AND FINE SANDSILTY, TRACE GRAVEL, MOIST			175.0	8	26	100	SS-S-40	1.00	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
			180.0	8	24	100	SS-S-41	1.00	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
			182.5	5	69	33	SS-S-42	-	-	-	-	-	-	-	-	-	-	-	13	A-3a (V)
			185.0	10																
			187.5	25																
STIFF, GRAY, CLAY, TRACE SILT, MOIST		495.8	190.0	17	22	100	SS-S-43	1.25	-	-	-	-	-	-	-	-	-	-	A-7-6 (V)	
			192.5	5	28	100	SS-S-44	1.00	-	-	-	-	-	-	-	-	-	-	26	A-7-6 (V)
			195.0	7																
			197.5	6	57	83	SS-S-45	-	-	-	-	-	-	-	-	-	-	-	-	A-4a (V)
HARD, GRAY, SANDY SILT, CLAYEY, GRAVELLY, SHALE PIECES, MOIST		485.8	200.0	10	84	50	SS-S-46	-	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
			202.5	9																
			205.0	18																
	207.5	16																		
	210.0	26																		

Figure B-5
Sheet 4 of 5

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:00 - D:\WP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID: _____		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 124+99, 25.0 RT		START: 1/5/11		END: 1/10/11		PG 5 OF 5		B-033-2-10															
MATERIAL DESCRIPTION AND NOTES				ELEV. 478.2	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.								
											GR	CS	FS	SI	CL	LL	PL	PI											
HARD, GRAY, SANDY SILT, CLAYEY, GRAVELLY, SHALE PIECES, MOIST (continued)				464.3	TR	212.5	11	54	100	SS-S-47	-	-	-	-	-	-	-	-	-	-	-	-	A-4a (V)						
						215.0	17																						
						217.5	6	42	0	SS-S-48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-4a (V)		
						220.0	9																						
						222.5	22																						
SHALE, GRAY.				464.3	TR	225.0	17	-	94	SS-S-49	-	31	13	6	30	20	-	-	-	11	-	-	A-4a (V)						
						227.5	33																						
						230.0	50/1"	-	100	SS-S-50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Rock (V)		
				455.7	EOB	232.5	50/1"	-	100	SS-S-51	-	-	-	-	-	-	-	-	-	-	-	-	Rock (V)						

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: USED 150 LB. BENTONITE POWDER; USED 6 BAG CEMENT; TREMIED 240 GAL. WATER

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:01 - D:\WIP\21-1\21-1-121361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PROJECT: CLEVELAND CENTRAL VIADUCT		DRILLING FIRM / OPERATOR: OHIO TEST BOR / HEPNER		DRILL RIG: SIMCO 2800 HSHT		STATION / OFFSET: 127+02		EXPLORATION ID: B-034-1-10																	
TYPE: BRIDGE REPLACEMENT		SAMPLING FIRM / LOGGER: S&W / VARA		HAMMER: SIMCO AUTOMATIC		ALIGNMENT: CENTERLINE		PAGE 1 OF 5																	
PID: 85531 BR ID:		DRILLING METHOD: 3.25" HSA / NQ2		CALIBRATION DATE: 1/14/11		ELEVATION: 676.8 (MSL) EOB: 228.7 ft.																			
START: 11/3/10 END: 11/8/10		SAMPLING METHOD: SPT / ST		ENERGY RATIO (%): 73.5		COORD: 663226.360 N, 2189892.050 E																			
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			ODOT CLASS (GI)	INST.							
									GR	CS	FS	SI	CL	LL	PL	PI			WC						
LOOSE TO MEDIUM DENSE, TAN TO BROWN, COARSE AND FINE SAND SLIGHTLY SILTY, TRACE TO SLIGHTLY GRAVELLY, OCCASIONAL BRICK DEBRIS, MOIST FILL		676.8	2.5	3 2	5	100	SS-S-1	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)						
			5.0	2 1	5	67	SS-S-2	-	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)					
			7.5	3 4	12	100	SS-S-3	-	-	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)				
		668.3	10.0	5 3	12	67	SS-S-4	-	-	-	-	-	-	-	-	-	-	-	-	-	A-6b (V)				
STIFF, BROWN, SILTY CLAY , SLIGHTLY SANDY, SLIGHTLY GRAVELLY, MOIST		666.8	12.5	6 7	17	100	SS-S-5	-	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)					
			15.0	2 3	11	56	SS-S-6	-	-	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)				
LOOSE TO MEDIUM DENSE, BROWN, COARSE AND FINE SAND , GRAVELLY, SLIGHTLY SILTY, OCCASIONAL IRON-OXIDE STAINING, MOIST		658.3	17.5	4 4	7	50	SS-S-7	-	-	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)				
			20.0	2 1	4	72	SS-S-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)			
			25.0	3 3	9	83	SS-S-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)		
			30.0	4 4	11	100	SS-S-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)		
VERY LOOSE TO LOOSE, TAN, COARSE AND FINE SAND , SILTY, MOIST		643.3	32.5	4 5	15	100	SS-S-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)			
			35.0	6 8	21	28	SS-S-12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)		
			40.0	10 14	42	100	SS-S-13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			45.0	20																					
MEDIUM DENSE TO DENSE, TAN GRADING TO GRAY, COARSE AND FINE SAND , SLIGHTLY SILTY TO SILTY, WET AT 35 FEET, MOIST		628.3	47.5	11	38	100	SS-S-14	-	0	1	68	-	31	-	-	-	-	-	23	-	A-3 (V)				

Figure B-6
Sheet 1 of 7

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:01 - D:\WIP\21-121-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID: _____		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 127+02		START: 11/3/10		END: 11/8/10		PG 2 OF 5		B-034-1-10						
MATERIAL DESCRIPTION AND NOTES			ELEV. 626.8	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.
										GR	CS	FS	SI	CL	LL	PL	PI			
MEDIUM DENSE TO DENSE, GRAY, FINE SAND, SILTY, WET (continued)			FS	618.3	52.5	14 17														
					55.0	11 14 15	36	100	SS-S-15	-	-	-	-	-	-	-	-	-	-	-
STIFF, GRAY, CLAYEY SILT, OCCASIONAL ORGANICS, MOIST			+++++	603.3	60.0	4 5 7	15	100	SS-S-16	1.75 3.5	-	-	-	-	-	30	22	8	21	A-4b (V)
					65.0			100	ST-S-17	1.25	-	-	-	-	-	-	-	-	-	-
VERY STIFF, GRAY, SILT AND CLAY, TRACE SAND, MOIST			+++++	603.3	70.0	3 5 6	13	100	SS-S-18	0.75 1.25	-	-	-	-	-	-	-	-	-	A-4b (V)
					75.0	6 10 13	28	78	SS-S-19	3.50	-	-	-	-	-	-	-	-	-	18
trace fine gravel below 98.5 feet				573.3	80.0			100	ST-S-20	4.00	-	-	-	-	-	-	-	-	-	A-6a (V)
					85.0	4 5 9	17	100	SS-S-21	1.5 1.75	-	-	-	-	-	-	-	-	-	-
trace fine gravel below 98.5 feet				573.3	90.0	3 4 6	12	100	SS-S-22	1.0 1.5	-	-	-	-	-	-	-	-	-	A-6a (V)
					95.0	2 4 7	13	100	SS-S-23	0.50	-	-	-	-	-	35	22	13	24	A-6a (V)
trace fine gravel below 98.5 feet				573.3	100.0			79	ST-S-24	1.25	-	-	-	-	-	-	-	-	-	A-6a (V)
					102.5															

Figure B-6
Sheet 2 of 7

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:01 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID:		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 127+02		START: 11/3/10		END: 11/8/10		PG 3 OF 5		B-034-1-10						
MATERIAL DESCRIPTION AND NOTES			ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.
										GR	CS	FS	SI	CL	LL	PL	PI			
MEDIUM STIFF, GRAY, SILT AND CLAY, MOIST <i>(continued)</i>			573.2	105.0	1	7	100	SS-S-25	0.50	-	-	-	-	-	-	-	-	-	A-6a (V)	
				2	4															
			563.3	110.0	1	7	100	SS-S-26	0.50	-	-	-	-	-	34	22	12	23	A-6a (V)	
				2	4															
VERY STIFF, GRAY, SILT AND CLAY, MOIST				115.0	6	23	100	SS-S-27	1.5 - 2.25	-	-	-	-	-	-	-	-	-	A-6a (V)	
				9	10															
				120.0	6	31	100	SS-S-28	2.75	-	-	-	-	-	-	-	-	-	A-6a (V)	
				11	14															
trace coarse sand and fine gravel to 153.5 feet				125.0		88		ST-S-29	3.5 - 4.0	-	-	-	-	-	-	-	20		A-6a (V)	
				130.0	6	32	100	SS-S-30	3.50	-	-	-	-	-	-	-	-	-	A-6a (V)	
				12	14															
				135.0	9	36	100	SS-S-31	2.75 - 3.5	-	-	-	-	-	-	-	-	-	A-6a (V)	
				12	17															
				140.0	6	31	100	SS-S-32	1.50	-	-	-	-	-	34	21	13	20	A-6a (V)	
				10	15															
				145.0	4	22	100	SS-S-33	1.0 - 1.5	-	-	-	-	-	-	-	-	-	A-6a (V)	
				8	10															
				150.0		88		ST-S-34	1.50	-	-	-	-	-	-	-	-	-	A-6a (V)	
VERY STIFF, GRAY, SILTY CLAY, TRACE COARSE SAND AND FINE GRAVEL, MOIST			523.3	155.0	4	21	100	SS-S-35	1.25 - 1.5	-	-	-	-	-	-	-	-	23	A-6b (V)	
				7	10															

Figure B-6
Sheet 3 of 7

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:01 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID:		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 127+02		START: 11/3/10		END: 11/8/10		PG 4 OF 5		B-034-1-10														
MATERIAL DESCRIPTION AND NOTES			ELEV. 519.7	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.								
										GR	CS	FS	SI	CL	LL	PL	PI											
VERY STIFF, GRAY, SILTY CLAY , TRACE COARSE SAND AND FINE GRAVEL, MOIST (continued) gravelly layer from 166 feet to 168 feet			485.8	157.5	6	26	100	SS-S-36	1.50	-	-	-	-	-	-	-	-	-	-	-	A-6b (V)							
				160.0	8	13																						
				162.5	5																							
				165.0	9	11																						
				167.5	4																							
				170.0	7	10																						
				172.5																								
				175.0			100				ST-S-39	2.25	-	-	-	-	-	-	-	-	-	-	-	-	23	A-6b (V)		
				177.5																								
				180.0	5	7	11																					
182.5																												
185.0	5	8	10																									
187.5																												
190.0	6	8	12						1.5-2.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-6b (V)				
192.5																												
195.0	19	28	40																									
197.5																												
200.0	16	31	42																									
202.5																												
205.0	11	19	25							2.0-3.75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-6b (V)			
207.5																												
210.0	7	12																										
HARD, GRAY, SILT AND CLAY , SLIGHTLY SANDY, SLIGHTLY GRAVELLY, MOIST			474.8																									
HARD, GRAY, SILTY CLAY , TRACE TO SLIGHTLY SANDY, SLIGHTLY GRAVELLY, THINLY LAMINATED, MOIST																												

Figure B-6
Sheet 4 of 7

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:01 - D:\WP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID:		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 127+02		START: 11/3/10		END: 11/8/10		PG 5 OF 5		B-034-1-10						
MATERIAL DESCRIPTION AND NOTES			ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.
										GR	CS	FS	SI	CL	LL	PL	PI			
HARD, GRAY, SILTY CLAY, TRACE TO SLIGHTLY SANDY, SLIGHTLY GRAVELLY, THINLY LAMINATED, MOIST (continued)			466.2	-	19															
					6	38	100	SS-S-47	1.0-2.5	3	4	3	- 90 -	-	-	-	23	A-6b (V)		
SHALE, GRAY, UNWEATHERED TO SLIGHTLY WEATHERED, VERY WEAK TO WEAK, FISSILE, MEDIUM SPACED PARTINGS AND MECHANICAL FRACTURES - AT 228 TO 228.5 FEET; CLOSE SPACED CLAY-FILLED JONTS; RQD 80%, REC 100%.			458.8	TR	80/2'	-	100	SS-S-48	-	-	-	-	-	-	-	-	-	Rock (V)		
					68		100	NQ2-1											CORE	
					92		100	NQ2-2												CORE
					448.1	EOB														

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: USED 100 LB. BENTONITE POWDER; TREMIED 2 BAG CEMENT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:01 - D:\WIP\21-121-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT_PROJECT\21-21361_CURRENT.GPJ

PROJECT: CLEVELAND CENTRAL VIADUCT	DRILLING FIRM / OPERATOR: OHIO TEST BOR / HEPNER	DRILL RIG: SIMCO 2800 HSHT	STATION / OFFSET: 133+92, 14.0 LT
TYPE: BRIDGE REPLACEMENT	SAMPLING FIRM / LOGGER: S&W / DUTT	HAMMER: SIMCO AUTOMATIC	ALIGNMENT: CENTERLINE
PID: 85531 BR ID:	DRILLING METHOD: 3.25" HSA / NQ2	CALIBRATION DATE: 1/14/11	ELEVATION: 576.4 (MSL) EOB: 194.2 ft.
START: 11/29/10 END: 12/1/10	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 73.5	COORD: 663893.190 N, 2190098.190 E

EXPLORATION ID B-038-1-10
PAGE 1 OF 4

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	INST.
								GR	CS	FS	SI	CL	LL	PL	PI	WC		
Asphalt	575.6																	
LOOSE, DARK GRAY TO BROWN, FINE SAND , TRACE OF SILT AND TRACE FINE GRAVEL, MOIST Fill	573.4	2.5	6	12	94	SS-S-1	-	-	-	-	-	-	-	-	-	-	-	A-3 (V)
VERY LOOSE TO LOOSE, DARK GRAY AND DARK BROWN, COARSE AND FINE SAND TRACE TO SLIGHTLY FINE GRAVELLY, WITH CINDERS AND COAL, MOIST Fill - silty from 5.5 to 13 feet		5.0	1	5	72	SS-S-2	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
		7.5	3	12	100	SS-S-3	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
		10.0	2	2	83	SS-S-4	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
		12.5	1	2	72	SS-S-5	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
LOOSE, BROWN, COARSE AND FINE SAND SILTY, MOIST	563.4	15.0	2	6	100	SS-S-6	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
LOOSE, BROWN, COARSE AND FINE SAND TRACE TO SLIGHTLY FINE GRAVELLY, MOIST	560.9	17.5	2	6	83	SS-S-7	-	13	20	38	-	29	-	-	-	12	A-3a (V)	
VERY STIFF, LIGHT BROWN, SILT , MOIST	558.4	20.0	2	6	94	SS-S-8	3.25	-	-	-	-	-	-	-	-	-	-	
LOOSE, BROWN, COARSE AND FINE SAND TRACE FINE GRAVEL, MOIST	557.3	22.5	2	9	94	SS-S-9	2.00	-	-	-	-	-	30	21	9	22	A-4b (V)	
MEDIUM STIFF, OLIVE-GRAY, CLAYEY SILT , MOIST	554.9	25.0	2	5	106	SS-S-10	1.50	-	-	-	-	-	-	-	-	-	A-6b (V)	
SOFT TO MEDIUM STIFF, OLIVE-GRAY, SILTY CLAY , MOIST		30.0	2	100		ST-S-11	1.50	-	-	-	-	-	-	-	-	-	27	A-6b (V)
		35.0																
STIFF, GRAY, SILT AND CLAY , MOIST		37.5	2	11	61	SS-S-12	1.75	-	-	-	-	-	-	-	-	-	-	A-6a (V)
		40.0	2	12	83	SS-S-13	2.00	-	-	-	-	32	21	11	24		A-6a (V)	
		42.5	2	15	89	SS-S-14	1.75	-	-	-	-	-	-	-	-	-	-	A-6a (V)
		45.0	3															
Frequent sand partings below 46.5 feet		47.5																

Figure B-7
Sheet 1 of 9

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:01 - D:\WP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID: _____		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 133+92, 14.0 LT		START: 11/29/10		END: 12/1/10		PG 2 OF 4		B-038-1-10																	
MATERIAL DESCRIPTION AND NOTES				ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.										
											GR	CS	FS	SI	CL	LL	PL	PI													
STIFF, GRAY, SILT AND CLAY, MOIST (continued)				526.4		4																									
						8																									
				515.9		4	17	100	SS-S-15	2.25	-	-	-	-	-	31	20	11	24	A-6a (V)											
						6																									
Drilled without sampling				515.9		8																									
						8																									
						8																									
						8																									
						8																									
						8																									
						8																									
						8																									
						8																									
						8																									
						8																									
						8																									

Figure B-7
Sheet 2 of 9

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:01 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID: _____		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 133+92, 14.0 LT		START: 11/29/10		END: 12/1/10		PG 3 OF 4		B-038-1-10															
MATERIAL DESCRIPTION AND NOTES				ELEV. 472.9	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.								
											GR	CS	FS	SI	CL	LL	PL	PI											
Drilled harder at 117.5					105.0																								
					107.5																								
					110.0																								
					112.5																								
					115.0																								
					117.5																								
					120.0																								
					122.5																								
					125.0																								
					127.5																								
					130.0																								
					132.5																								
					135.0																								
					137.5																								
	140.0																												
	142.5																												
	145.0																												
	147.5																												
	150.0																												
	152.5	424.4	TR																										
SHALE , MEDIUM GRAY, UNWEATHERED TO SLIGHTLY WEATHERED, VERY WEAK TO WEAK, THINLY LAMINATED, CLOSELY SPACED HORIZONTAL BEDDING JOINTS; RQD 86%, REC 100%.									50/4" A - A	100	SS-S-17																		
	155.0																												

Figure B-7
Sheet 3 of 9

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:01 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT_GPJ

MATERIAL DESCRIPTION AND NOTES	ELEV. 419.3	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.
								GR	CS	FS	SI	CL	LL	PL	PI			
SHALE, MEDIUM GRAY, UNWEATHERED TO SLIGHTLY WEATHERED, VERY WEAK TO WEAK, THINLY LAMINATED, CLOSELY SPACED HORIZONTAL BEDDING JOINTS; RQD 86%, REC 100%. (continued)		157.5	79		100	NQ2-1											CORE	
		160.0																
		162.5																
		165.0	82		100	NQ2-2											CORE	
		167.5																
		170.0																
	172.5																	
	175.0	88		100	NQ2-3												CORE	
	177.5																	
	180.0																	
	182.5																	
	185.0	96		100	NQ2-4												CORE	
	187.5																	
	190.0																	
	192.5	80		100	NQ2-5												CORE	
	382.2	EOB																

NOTES: NONE
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: USED 50 LB. BENTONITE POWDER; USED 1 BAG CEMENT; TREMIED 80 GAL. WATER

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 3/7/13 08:50 - D:\WIP\21-121-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PROJECT: CLEVELAND CENTRAL VIADUCT		DRILLING FIRM / OPERATOR: OHIO TEST BOR / HEPNER		DRILL RIG: SIMCO 2800 HSHT		STATION / OFFSET: 141+30, 44.0 RT		EXPLORATION ID: B-039-3-10											
TYPE: BRIDGE REPLACEMENT		SAMPLING FIRM / LOGGER: S&W / DUTT		HAMMER: SIMCO AUTOMATIC		ALIGNMENT: CENTERLINE		PAGE 1 OF 5											
PID: 85531 BR ID:		DRILLING METHOD: 3.25" HSA / NQ2		CALIBRATION DATE: 1/14/11		ELEVATION: 582.6 (MSL) EOB: 218.5 ft.													
START: 12/2/10 END: 12/7/10		SAMPLING METHOD: SPT / ST		ENERGY RATIO (%): 73.5		COORD: 664566.390 N, 2190393.570 E													
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			ODOT CLASS (GI)	INST.	
									GR	CS	FS	SI	CL	LL	PL	PI			WC
LOOSE, GRAY, GRAVEL Fill		582.6																	
VERY LOOSE TO LOOSE, DARK GRAY AND GRAY-BROWN, SANDY SILT, TRACE GRAVEL, TRACE SLAG TO 3 FEET, MOIST Fill wet at 3.0 feet		581.6	2.5	4	7	100	SS-S-1	-	-	-	-	-	-	-	-	-	-	-	A-4a (V)
				2															
			5.0	1	5	33	SS-S-2	0.00	-	-	-	-	-	-	-	-	-	-	A-4a (V)
VERY SOFT TO SOFT, BROWN AND GRAY, CLAYEY SILT, WITH SILTY CLAY LAYER, WET		577.1		1	4	94	SS-S-3	1.00	-	-	-	-	-	-	-	-	-	-	A-4b (V)
			7.5	2															
			10.0	1	5	89	SS-S-4	0.75	-	-	-	-	-	-	-	-	-	-	A-4b (V)
trace roots from 11 to 12.5 feet			12.5	1	1	100	SS-S-5	0.25	-	-	-	-	-	-	-	-	-	-	A-4b (V)
sandy at 13.5 to 16 feet			15.0	1	2	100	SS-S-6	0.50	-	-	-	-	-	NP	NP	NP	19	-	A-4b (V)
VERY SOFT, BROWN, SANDY SILT, TRACE CLAY, WET		566.6		1	2	100	SS-S-7	0.00	-	-	-	-	-	-	-	-	-	-	A-4a (V)
VERY LOOSE, BROWN, FINE SAND, WET		564.6		1	0	100	SS-S-8	-	-	-	-	-	-	-	-	-	-	-	A-3 (V)
		561.1		1															
VERY LOOSE, GRAY, SANDY SILT, WET		561.1		1	1	100	SS-S-9	-	-	-	-	-	-	-	-	-	-	-	A-4a (V)
		556.1		1															
VERY LOOSE, GRAY, COARSE AND FINE SAND TRACE GRAVEL, TRACE SILT AND CLAY, TRACE WOOD FRAGMENTS, WET		556.1		2	4	67	SS-S-10	-	1	38	51	-	10	-	-	-	25	-	A-3a (V)
			30.0	1															
			32.5	1	7	83	SS-S-11	-	-	-	-	-	-	-	-	-	-	-	
MEDIUM STIFF, GRAY, CLAYEY SILT, WITH GRAVELLY SAND LAYER, WET		548.1		2															
		546.1		4	11	83	SS-S-12	1.25	-	-	-	-	-	34	23	11	24	-	A-6a (V)
STIFF, GRAY, SILT AND CLAY, MOIST			40.0	3															
			42.5	4	12	94	SS-S-13	1.75	-	-	-	-	-	-	-	-	-	-	A-6a (V)
			45.0	2															
			47.5	4															
				6	92		ST-S-14	1.75	-	-	-	-	-	-	-	-	-	-	A-6a (V)

Figure B-8
Sheet 1 of 10

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 3/7/13 08:50 - D:\WIP\21-121-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID:		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 141+30, 44.0 RT		START: 12/2/10		END: 12/7/10		PG 2 OF 5		B-039-3-10						
MATERIAL DESCRIPTION AND NOTES			ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.
										GR	CS	FS	SI	CL	LL	PL	PI			
STIFF, GRAY, SILT AND CLAY, MOIST (continued)			532.6																	
trace to scattered shale fragments below 54.5 feet				52.5																
				55.0	3	4	11	100	SS-S-15	1.50	-	-	-	-	-	-	-	-	A-6a (V)	
				57.5																
medium stiff from 58.5 to 67 feet				60.0	2	3	10	61	SS-S-16	1.00	-	-	-	-	-	-	-	26	A-6a (V)	
				62.5																
				65.0	2	3	10	67	SS-S-17	0.75	-	-	-	-	-	-	-	-	A-6a (V)	
				67.5																
				70.0					100	ST-S-18	1.50	-	-	-	-	-	-	-	A-6a (V)	
				72.5																
				75.0	3	5	15	100	SS-S-19	1.00	-	-	-	-	-	-	-	22	A-6a (V)	
				77.5																
				80.0	4	6	18	0	SS-S-20	-	-	-	-	-	-	-	-	-	A-6a (V)	
				82.5					100	ST-S-21	2.50	-	-	-	-	-	-	-	A-6a (V)	
STIFF, GRAY, CLAYEY SILT, TRACE SHALE FRAGMENTS AND FINE GRAVEL, MOIST			499.1	85.0	3	6	18	94	SS-S-22	1.75	-	-	-	-	30	22	8	24	A-4b (V)	
				87.5																
				90.0	3	6	17	100	SS-S-23	2.00	-	-	-	-	-	-	-	-	A-4b (V)	
				92.5																
				95.0					100	ST-S-24	1.25	-	-	-	-	-	-	-	A-4b (V)	
very stiff at 96 feet				97.5																
				100.0	5	8	24	61	SS-S-25	2.50	-	-	-	-	21	15	6	13	A-4b (V)	
			481.1	102.5																
HARD, GRAY, SILT AND CLAY GRAVELLY, SLIGHTLY ANDY, MOIST																				

Figure B-8
Sheet 2 of 10

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 3/7/13 08:50 - D:\WIP\21-121-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID:		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 141+30, 44.0 RT		START: 12/2/10		END: 12/7/10		PG 3 OF 5		B-039-3-10							
MATERIAL DESCRIPTION AND NOTES			ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.	
										GR	CS	FS	SI	CL	LL	PL	PI				
HARD, GRAY, SILT AND CLAY GRAVELLY, SLIGHTLY ANDY, MOIST (continued)			479.1	105.0	9	50	94	SS-S-26	4.5+	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
HARD, GRAY, SILTY CLAY, SLIGHTLY GRAVELLY TO GRAVELLY, SLIGHTLY SANDY, MOIST			476.1	107.5	19																
				110.0	10	67	94	SS-S-27	4.5+	-	-	-	-	-	-	-	-	-	-	-	A-6b (V)
				112.5	22																
				115.0	24	74	89	SS-S-28	4.5+	5	4	7	26	58	-	-	-	16	-	-	A-6b (V)
VERY STIFF, GRAY, SILTY CLAY, MOIST			466.1	117.5	36																
				120.0	5	21	100	SS-S-29	1.50	-	-	-	-	-	-	-	-	-	-	-	A-6b (V)
				122.5	7																
				125.0	8	20	100	SS-S-30	2.00	-	-	-	-	-	-	-	-	29	-	-	A-6b (V)
				127.5	8																
SOFT, GRAY, CLAYEY SILT, WET			453.6	130.0	3	18	100	SS-S-31	-	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)
				132.5	6																
DENSE, GRAY, COARSE AND FINE SAND WET @ 133.0 - 133.4 feet.; cobbles based on drill action			450.6	135.0	9																
				137.5	21	58	67	SS-S-32	2.00	-	-	-	-	-	-	-	-	-	-	-	-
HARD, GRAY, SANDY SILT, MOIST			447.6	140.0	24																
				142.5	23																
HARD, GRAY, SILTY CLAY, SCATTERED FINE SAND LAYERS, MOIST			446.1	145.0	27	59	100	SS-S-33	4.5+	-	-	-	-	-	-	-	-	-	-	-	A-6b (V)
				147.5	14																
HARD, GRAY, SANDY SILT, SLIGHTLY GRAVELLY TO GRAVELLY, SLIGHTLY CLAYEY, MOIST			441.1	150.0	23	100	100	SS-S-34	4.5+	11	14	10	-	65	-	-	-	11	-	-	A-4a (V)
				152.5	36																
VERY DENSE, GRAY, SILT, GRAVELLY, SCATTERED FINE SHALE FRAGMENTS, MOIST			436.1	155.0	46	-	94	SS-S-35	4.5+	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)
					50/4"	-	100	SS-S-36	4.5+	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)
slightly clayey below 153.5 feet																					

Figure B-8
Sheet 3 of 10

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 3/7/13 08:50 - D:\WIP\21-121-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID:		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 141+30, 44.0 RT		START: 12/2/10		END: 12/7/10		PG 4 OF 5		B-039-3-10						
MATERIAL DESCRIPTION AND NOTES			ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.
										GR	CS	FS	SI	CL	LL	PL	PI			
VERY DENSE, GRAY, SILT, GRAVELLY, SCATTERED FINE SHALE FRAGMENTS, MOIST (continued)			425.5		157.5															
					160.0	31 46 50/47	-	81	SS-S-37	4.5+	-	-	-	-	-	NP	NP	NP	14	A-4b (V)
HARD, GRAY, SILT AND CLAY, MOIST grades to gravelly at 171.5 feet			416.1		162.5															
					165.0	21 38 40	96	100	SS-S-38	4.5+	-	-	-	-	-	-	-	-	-	-
			405.1	TR	167.5															
					170.0	12 16 20	44	100	SS-S-39	4.00	-	-	-	-	-	35	23	12	22	A-6a (V)
SHALE, DARK GRAY, UNWEATHERED, MODERATELY STRONG, THINLY LAMINATED, WIDELY SPREAD BEDDING AND INCLINED JOINTS - THIN FRACTURE ZONE AT 185.5 FT.; RQD 93.5%, REC 99.8%.			405.1	TR	175.0															
					177.5	25 32 50	100	100	SS-S-40	4.5+	-	-	-	-	-	-	-	-	-	-
			405.1	TR	180.0															
					182.5	80		98	NQ2-1											
			405.1	TR	185.0															
					187.5	96		100	NQ2-2											
			405.1	TR	190.0															
					192.5	97		100	NQ2-3											
			405.1	TR	195.0															
					197.5															
			405.1	TR	200.0															
					202.5															
			405.1	TR	205.0															
					207.5															
			405.1	TR	210.0															
						97		100	NQ2-4											

Figure B-8
Sheet 4 of 10

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 3/7/13 08:50 - D:\WIP\21-121-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID: _____		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 141+30, 44.0 RT			START: 12/2/10		END: 12/7/10		PG 5 OF 5		B-039-3-10						
MATERIAL DESCRIPTION AND NOTES				ELEV. 372.0	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.
											GR	CS	FS	SI	CL	LL	PL	PI			
SHALE , DARK GRAY, UNWEATHERED, MODERATELY STRONG, THINLY LAMINATED, WIDELY SPREAD BEDDING AND INCLINED JOINTS - THIN FRACTURE ZONE AT 185.5 FT.; RQD 93.5%, REC 99.8%. (continued)				364.1	-212.5																
					-215.0																
					-217.5	90		100	NQ2-5												
					EOB																

NOTES: NONE
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: NOT RECORDED

Figure B-8
 Sheet 5 of 10

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:02 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PROJECT: CLEVELAND CENTRAL VIADUCT		DRILLING FIRM / OPERATOR: PRO GEOTECH / FAY		DRILL RIG: MOBILE B-57		STATION / OFFSET: 148+30, 24.0 RT		EXPLORATION ID: B-042-1-10														
TYPE: BRIDGE REPLACEMENT		SAMPLING FIRM / LOGGER: S&W / BAYLEY/TABOR		HAMMER: MOBILE AUTOMATIC		ALIGNMENT: CENTERLINE		PAGE 1 OF 5														
PID: 85531 BR ID:		DRILLING METHOD: 3.25" HSA / NQ2		CALIBRATION DATE: 1/14/11		ELEVATION: 583.2 (MSL) EOB: 228.2 ft.																
START: 11/22/10 END: 12/2/10		SAMPLING METHOD: SPT / ST		ENERGY RATIO (%): 81.3		COORD: 665204.800 N, 2190665.930 E																
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.			
									GR	CS	FS	SI	CL	LL	PL	PI						
LOOSE, GRAVEL AND/OR STONE FRAGMENTS		582.6		34	75	67	SS-S-1	-	-	-	-	-	-	-	-	-	-	-	-	-	A-2-4 (V)	
MEDIUM DENSE TO DENSE, BLACK, GRAVEL AND/OR STONE FRAGMENTS WITH SAND AND SILT/BRICK FRAGMENTS, WEAK ASPHALT ODOR TO 3 FEET, MOIST Fill wet at 3.5 feet		576.8	2.5	2	14	94	SS-S-2	-	-	-	-	-	-	-	-	-	-	-	-	-	A-2-4 (V)	
LOOSE, DARK GRAY AND BROWN, COARSE AND FINE SAND, SLIGHTLY GRAVELLY GRADING TO TRACE, WET Possible Fill		573.6	5.0	6	12	89	SS-S-3	-	-	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
SOFT TO MEDIUM STIFF, OLIVE-GRAY BROWN, SILT AND CLAY, TRACE SCATTERED SAND, WET		565.2	7.5	2	7	72	SS-S-4	-	-	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
		564.0	10.0	2	7	61	SS-S-5	-	-	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
VERY SOFT, BROWN, ORGANIC CLAY, SLIGHTLY PEATY, WET		564.0	12.5	1	5	94	SS-S-6	0.6-0.9	-	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
VERY SOFT TO SOFT, GRAY WITH BROWN, SILT AND CLAY, WET		554.7	15.0	1	5	100	SS-S-7	0.6-0.8	-	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
		554.7	17.5	1	4	122	SS-S-8	0.6-0.7	-	-	-	-	-	-	-	-	-	-	-	-		
		554.7	20.0	1	3	122	SS-S-9	0.1-0.7	-	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
VERY LOOSE, BROWN-GRAY, SILT, TRACE TO SLIGHTLY CLAYEY, WET		545.7	25.0	1	4	128	SS-S-10	0.3-0.4	-	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
		545.7	30.0	1	4	133	SS-S-11	0.00	-	-	-	-	-	NP	NP	NP	28	-	-	-	A-4b (V)	
MEDIUM DENSE, DARK GRAY, COARSE AND FINE SAND, SLIGHTLY FINE GRAVELLY TO GRAVELLY, WET			35.0	1	1	0	SS-S-12	-	-	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
SPT at 38.5 feet driven into estimated 4 feet of heave at bottom of hole - disregard S-12 blow counts			40.0	WOH																		
			42.5	5	15	67	SS-S-13	-	-	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			45.0	5																		
			47.5	3	18	61	SS-S-14	-	40	36	18	-	6	-	-	-	-	-	-	-	12	A-3a (V)

Figure B-9
Sheet 1 of 10

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:02 - D:\WP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID:		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 148+30, 24.0 RT		START: 11/22/10		END: 12/2/10		PG 2 OF 5		B-042-1-10							
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTH	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.		
									GR	CS	FS	SI	CL	LL	PL	PI					
VERY STIFF, BROWN AND GRAY-BROWN, SILT AND CLAY, TRACE SAND AND FINE GRAVEL, MOIST becomes moist to wet at 63 feet becomes wet at 83.5 feet		533.2																			
		532.2		6 7																	
			52.5																		
			55.0		5 8 14	30	100	SS-S-15	2.0 - 4.0	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
			57.5																		
			60.0				46	ST-S-16	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
			62.5																		
			65.0		4 8 10	24	100	SS-S-17	2.1 - 2.75	-	-	-	-	-	34	23	11	21	-	A-6a (V)	
			67.5																		
			70.0		4 6 9	20	122	SS-S-18	1.75 - 1.9	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)
			72.5																		
			75.0		4 6 9	20	89	SS-S-19	1.0 - 2.25	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)
	77.5																				
	80.0				100	ST-S-20	1.1 - 1.25	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)		
	82.5																				
	85.0		4 8 9	23	128	SS-S-21	1.75 - 2.1	-	-	-	-	-	-	-	-	-	23	-	A-6a (V)		
	87.5																				
	90.0		4 7 9	22	111	SS-S-22	-	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)		
	92.5	489.7																			
MEDIUM STIFF TO STIFF, GRAY, SILT, CLAYEY, TRACE FINE GRAVEL TO 95 FEET, MOIST				3 5 6	15	133	SS-S-23	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)		
			95.0																		
	97.5																				
	100.0	482.2		3 3 3	8	133	SS-S-24	0.5 - 0.75	-	-	-	-	-	33	23	10	28	-	A-4b (V)		
LOOSE, GRAY, COARSE AND FINE SANDSILTY, WET																					
	102.5																				

Figure B-9
Sheet 2 of 10

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:02 - D:\WIP\21-121-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT_GPJ

PID: 85531 BR ID:		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 148+30, 24.0 RT		START: 11/22/10		END: 12/2/10		PG 3 OF 5		B-042-1-10										
MATERIAL DESCRIPTION AND NOTES			ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.		
										GR	CS	FS	SI	CL	LL	PL	PI					
LOOSE, GRAY, COARSE AND FINE SANDSILTY, WET <i>(continued)</i> VERY DENSE, GRAY, GRAVEL AND/OR STONE FRAGMENTS WITH SAND AND SILT, WET			478.2	105.0			0	ST-S-25	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)		
			471.2	107.5																		
				110.0	15 40 36	103	83	SS-S-26	-	42	17	18	-	23	-	-	-	-	8	A-2-4 (V)		
DENSE TO VERY DENSE, GRAY, SILT, MOIST			452.2	112.5																		
				115.0	13 26 30	76	83	SS-S-27	2.75 4.5	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
				120.0	12 18 20	51	89	SS-S-28	2.0 2.5	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
grades to medium dense below 123 feet				125.0	8 10 13	31	94	SS-S-29	1.75 2.5	-	-	-	-	-	-	NP	NP	NP	17	A-4b (V)		
			448.2	130.0			100	ST-S-30	1.75	-	-	-	-	-	-	-	-	-	-	A-4b (V)		
DENSE, GRAY, COARSE AND FINE SANDSILTY, TRACE GRAVEL, WET				132.5																		
			448.2	135.0	8 12 18	41	83	SS-S-31	-	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
				140.0	33 44 50	127	83	SS-S-32	4.5+	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
				145.0	9 15 20	47	94	SS-S-33	3.75 4.5	-	-	-	-	-	-	37	22	15	22	A-6a (V)		
sandy, with interbedded silty sand layers from 148.5 to 151 feet				150.0	14 35 50/57	-	106	SS-S-34	4.5+	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
trace sand, gravel, and weathered shale pieces from 151 to 183 feet			448.2	152.5																		
				155.0	23 32 36	92	72	SS-S-35	4.5+	-	-	-	-	-	-	-	-	-	12	A-6a (V)		

Figure B-9
Sheet 3 of 10

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT. GDT - 2/12/13 07:02 - D:\WIP\21-121-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID:		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 148+30, 24.0 RT		START: 11/22/10		END: 12/2/10		PG 4 OF 5		B-042-1-10									
MATERIAL DESCRIPTION AND NOTES			ELEV. 426.1	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.			
										GR	CS	FS	SI	CL	LL	PL	PI						
VERY STIFF TO HARD, GRAY, SILT AND CLAY, DAMP TO MOIST (continued) bubbles surfacing outside of casing as bore advanced past 167 feet			400.2	157.5	11	73	94	SS-S-36	3.25	-	-	-	-	-	-	-	-	-	-	A-6a (V)			
				160.0	18					3.5													
				162.5	9	41	94	SS-S-37	1.75	-	-	-	-	-	-	-	-	-	-	-	21	A-6a (V)	
				165.0	13					3.5													
				167.5	6	39	111	SS-S-38	3.5	-	-	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)
				170.0	12					4.0													
				172.5	9	47	56	SS-S-39	-	-	-	-	-	-	-	33	19	14	27			A-6a (V)	
175.0	14					21																	
177.5	26	-	76	SS-S-40	2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)				
180.0	53					50/57																	
182.5	50/2"	-	100	SS-S-41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Rock (V)				
185.0	75		100	NQ2-1															CORE				
187.5	90		96	NQ2-2															CORE				
190.0	98		100	NQ2-3															CORE				
192.5	91		100	NQ2-4															CORE				
195.0																							
197.5																							
200.0																							
202.5																							
205.0																							
207.5																							
210.0																							

Figure B-9
Sheet 4 of 10

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:02 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID: _____		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 148+30, 24.0 RT		START: 11/22/10		END: 12/2/10		PG 5 OF 5		B-042-1-10															
MATERIAL DESCRIPTION AND NOTES				ELEV. 372.5	DEPTH		SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.							
												GR	CS	FS	SI	CL	LL	PL	PI										
SHALE , DARK GRAY, UNWEATHERED, SLIGHTLY STRONG, THINLY LAMINATED, FISSILE, WIDELY SPACED BEDDING FRACTURES; RQD 93.1%, REC 98.8%. <i>(continued)</i>				355.0	EOB	-212.5																							
						-215.0																							
						-217.5	99		100	NQ2-5																		CORE	
						-220.0																							
						-222.5																							
						-225.0																							
						-227.5	100		100	NQ2-6														CORE					

NOTES: BOREHOLE COLLAPSED TO 85 FEET BGS PRIOR TO ABANDONMENT. PORTLAND CEMENT/BENTONITE MIX TREMIED FROM 85 FT DEPTH.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: USED 25 LB. BENTONITE POWDER; USED 1 BAG CEMENT; TREMIED 40 GAL. WATER

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:02 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PROJECT: CLEVELAND CENTRAL VIADUCT		DRILLING FIRM / OPERATOR: PRO GEOTECH / FAY		DRILL RIG: MOBILE B-57		STATION / OFFSET: 151+80, 60.0 RT		EXPLORATION ID: B-043-1-10												
TYPE: BRIDGE REPLACEMENT		SAMPLING FIRM / LOGGER: S&W / TABOR		HAMMER: MOBILE AUTOMATIC		ALIGNMENT: CENTERLINE		PAGE 1 OF 4												
PID: 85531 BR ID:		DRILLING METHOD: 3.25" HSA / NQ2		CALIBRATION DATE: 1/14/11		ELEVATION: 582.6 (MSL) EOB: 176.0 ft.														
START: 12/7/10 END: 12/13/10		SAMPLING METHOD: SPT / ST		ENERGY RATIO (%): 81.3		COORD: 665500.860 N, 2190845.510 E														
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTH	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.	
									GR	CS	FS	SI	CL	LL	PL	PI				
LOOSE, BLACK, TOPSOIL, WITH ROCK FRAGMENTS, MOIST		582.6		3																
LOOSE, BROWN, COARSE AND FINE SANDSILTY, TRACE ORGANICS, MOIST Fill		579.6	2.5	2	5	33	SS-S-1	-	-	-	-	-	-	-	-	-	-	-	-	-
LOOSE, BROWN, COARSE AND FINE SANDSILTY, TRACE ORGANICS, MOIST Fill		577.1	5.0	2	5	56	SS-S-2	-	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
LOOSE, GRAVEL AND STONE FRAGMENTSRock fragments, concrete and glass, moist fill		574.1	7.5	1	4	6	SS-S-3	-	-	-	-	-	-	-	-	-	-	-	-	A-1-a (V)
MEDIUM STIFF, DARK GRAY, SANDY SILT, WET		572.1	10.0	2	8	39	SS-S-4	-	-	-	-	-	-	-	-	-	-	-	-	A-4a (V)
SOFT, GRAY, SILT, SLIGHTLY CLAYEY TO CLAYEY, SCATTERED WOOD FRAGMENTS, MOIST			12.5	1	4	100	SS-S-5	0.00	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)
			15.0	1	3	100	SS-S-6	0.50	-	-	-	-	-	-	-	-	-	-	164	A-4b (V)
			17.5	1	1	67	SS-S-7	0.50	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)
			20.0	1	3	122	SS-S-8	0.00	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)
			25.0	1	3	122	SS-S-9	0.5 - 1.25	-	-	-	-	-	34	28	6	36	-	-	A-4b (V)
medium stiff beginning at 27 feet			30.0	1	5	100	SS-S-10	1.50	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)
			32.5	2	25		ST-S-11	1.25 - 1.5	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)
SOFT, GRAY, SILT, TRACE TO SLIGHTLY FINE SANDY, WET		549.6	35.0	1	1	100	SS-S-12	-	-	-	-	-	-	-	-	-	-	-	32	A-4b (V)
			40.0	1	8	100	SS-S-13	-	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
LOOSE TO MEDIUM DENSE, DARK GRAY TO GRAY, COARSE AND FINE SAND, SLIGHTLY GRAVELLY TO GRAVELLY, TRACE SILT, WET		543.6	45.0	6	16	67	SS-S-14	-	22	36	28	-	14	-	-	-	-	-	15	A-3a (V)
			47.5	3	12	100	SS-S-15	1.25 - 2.0	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)

Figure B-10
Sheet 1 of 6

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:02 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID: _____		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 151+80, 60.0 RT		START: 12/7/10		END: 12/13/10		PG 2 OF 4		B-043-1-10						
MATERIAL DESCRIPTION AND NOTES			ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.
										GR	CS	FS	SI	CL	LL	PL	PI			
STIFF, GRAY, SILT AND CLAY, MOIST (continued)			532.6		3															
				52.5	3															
				55.0	3	18	100	SS-S-16	1.75 4.0	-	-	-	-	-	33	21	12	21	A-6a (V)	
STIFF TO VERY STIFF, GRAY, SILTY CLAY, MOIST			525.6	57.5	5															
				60.0			75	ST-S-17	2.0 2.25	-	-	-	-	-	-	-	-	-	A-6b (V)	
				62.5																
				65.0	3	18	72	SS-S-18	0.75 1.25	-	-	-	-	-	-	-	-	-	A-6b (V)	
shale fragments from 68.5 feet to 82 feet				67.5																
				70.0			100	ST-S-19	1.25 1.5	-	-	-	-	-	-	-	-	-	A-6b (V)	
				72.5																
				75.0	3	14	100	SS-S-20	1.0 1.25	-	-	-	-	-	-	-	-	24	A-6b (V)	
				77.5																
				80.0	3	16	100	SS-S-21	1.25	-	-	-	-	-	-	-	-	-	A-6b (V)	
				82.5																
				85.0	3	23	100	SS-S-22	2.0 2.5	-	-	-	-	-	-	-	-	-	A-6b (V)	
				87.5																
				90.0	3	15	100	SS-S-23	1.0 1.25	-	-	-	-	-	37	21	16	26	A-6b (V)	
				92.5																
MEDIUM STIFF TO STIFF, GRAY, SILT AND CLAY			489.1	95.0	3	9	133	SS-S-24	0.50	-	-	-	-	-	-	-	-	-	A-6a (V)	
							121	ST-S-25	0.50	-	-	-	-	-	-	-	-	-	A-6a (V)	
shale fragments from 97 feet to 102 feet				97.5																
				100.0	3	14	100	SS-S-26	0.5 0.75	-	-	-	-	-	-	-	-	-	A-6a (V)	
				102.5																

Figure B-10
Sheet 2 of 6

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:02 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT_GPJ

PID: 85531		BR ID:		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 151+80, 60.0 RT		START: 12/7/10		END: 12/13/10		PG 3 OF 4		B-043-1-10								
MATERIAL DESCRIPTION AND NOTES			ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.		
										GR	CS	FS	SI	CL	LL	PL	PI					
MEDIUM STIFF TO STIFF, GRAY, SILT AND CLAY <i>(continued)</i>			479.0		3																	
			476.1	105.0	4	12	100	SS-S-27	0.5-1.5	-	-	-	-	-	32	21	11	28	A-6a (V)			
MEDIUM DENSE, GRAY, COARSE AND FINE SAND SILTY, SLIGHTLY FINE GRAVELLY, SHALE FRAGMENTS, WET				107.5	5																	
			471.6	110.0	4	34	100	SS-S-28	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)		
HARD, GRAY, SILT, TRACE SAND, MOIST				112.5	10																	
thin silty sand layer at 114 feet				115.0	15	75	94	SS-S-29	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)		
			465.6	117.5	23																	
DENSE TO VERY DENSE, GRAY, COARSE AND FINE SAND, SILTY, SLIGHTLY GRAVELLY TO GRAVELLY, WITH SCATTERED GRAVEL LAYERS, WET				120.0	32																	
				122.5	18	136	89	SS-S-30	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)		
				125.0	50																	
				127.5	17	107	83	SS-S-31	-	61	18	12	-	9	-	-	-	10	A-3a (V)			
				130.0	39																	
				132.5	17	57	83	SS-S-32	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)		
				135.0	21																	
				137.5	12	51	83	SS-S-33	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)		
				140.0	17																	
				142.5	13	69	100	SS-S-34	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)		
				145.0	22																	
				147.5	13	69	100	SS-S-34	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)		
				150.0	18	57	100	SS-S-35	-	14	52	18	-	16	-	-	-	15	A-3a (V)			
				152.5	21																	
			431.6	155.0	19	81	89	SS-S-36	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)		
HARD, GRAY, SILT, CLAYEY, TRACE TO ABUNDANT SHALE FRAGMENTS, MOIST				152.5	25																	
				155.0	11	66	100	SS-S-37	4.50	-	-	-	-	-	-	-	-	-	-	A-4b (V)		
					20																	

Figure B-10
Sheet 3 of 6

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:02 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID:		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 151+80, 60.0 RT		START: 12/7/10		END: 12/13/10		PG 4 OF 4		B-043-1-10							
MATERIAL DESCRIPTION AND NOTES			ELEV.	DEPTH	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.	
										GR	CS	FS	SI	CL	LL	PL	PI				
SHALE GRAY, SEVERELY WEATHERED, VERY WEAK, LAMINATED.			423.9	TR	50/3"	-	100	SS-S-38	-	-	-	-	-	28	20	8	13	A-4b (V)			
			417.6		50/4"	-	100	SS-S-39	-	-	-	-	-	-	-	-	-	-	Rock (V)		
SHALE DARK GRAY, UNWEATHERED TO SLIGHTLY WEATHERED, WEAK TO SLIGHTLY STRONG, THINLY LAMINATED, WIDELY SPACE BEDDING FRACTURES; RQD 27.3%, REC 82.1%.			165.0		0		39	NQ2-1										CORE			
			167.5		9		89	NQ2-2												CORE	
			170.0																		
			172.5		52		89	NQ2-3													CORE
			406.6	EOB																	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: USED 75 LB. BENTONITE POWDER; USED 3 BAG CEMENT; TREMIED 90 GAL. WATER

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:02 - D:\WIP\21-121-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PROJECT: CLEVELAND CENTRAL VIADUCT		DRILLING FIRM / OPERATOR: OHIO TEST BOR / HEPNER		DRILL RIG: SIMCO 2800 HSHT		STATION / OFFSET: 158+24, 11.0 RT		EXPLORATION ID: B-046-1-10										
TYPE: BRIDGE REPLACEMENT		SAMPLING FIRM / LOGGER: S&W / VARA		HAMMER: SIMCO AUTOMATIC		ALIGNMENT: CENTERLINE		PAGE 1 OF 4										
PID: 85531 BR ID:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/14/11		ELEVATION: 627.5 (MSL) EOB: 209.0 ft.												
START: 11/11/10 END: 11/16/10		SAMPLING METHOD: SPT / ST		ENERGY RATIO (%): 73.5		COORD: 666042.390 N, 2191141.650 E												
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			ODOT CLASS (GI)	INST.
									GR	CS	FS	SI	CL	LL	PL	PI		
CONCRETE		627.5																
LOOSE, BROWN, COARSE AND FINE SAND SLIGHTLY GRAVELLY TO GRAVELLY, SILTY, FREQUENT BRICK AND CONCRETE DEBRIS, SCATTERED PLANT MATTER; FAINT HYDROCARBON ODOR, MOIST Fill		627.3	2.5	3	15	56	SS-S-1	-	-	-	-	-	-	-	-	-	-	A-3a (V)
grades to dense faint hydrocarbon odor at 6 to 7.5 feet depth		619.5	5.0	3	12	56	SS-S-2	-	-	-	-	-	-	-	-	-	-	A-3a (V)
LOOSE, BROWN, COARSE AND FINE SAND OCCASIONAL SLIGHTLY CLAYEY, FINE SANDY SILT LAYERS, MOIST			7.5	30	47	67	SS-S-3	-	-	-	-	-	-	-	-	-	-	A-3a (V)
trace to slightly clayey from 14.5 to 18 feet			10.0	5	11	100	SS-S-4	-	-	-	-	-	-	-	-	-	-	A-3a (V)
wet below 22 feet			12.5	2	7	100	SS-S-5	-	-	-	-	-	-	-	-	-	-	A-3a (V)
trace to slightly clayey below 23.5 feet			15.0	3	10	67	SS-S-6	-	-	-	-	-	-	-	-	-	-	A-3a (V)
			17.5	2	6	100	SS-S-7	-	-	-	-	-	-	-	-	-	-	A-3a (V)
			20.0	3	9	83	SS-S-8	-	-	-	-	-	-	-	-	-	-	A-3a (V)
			22.5															
			25.0	4	12	100	SS-S-9	-	-	-	-	-	-	-	-	-	-	A-3a (V)
			27.5															
MEDIUM DENSE, GRAY, SILT , TRACE TO SLIGHTLY CLAYEY, TRACE GRAVEL, LAMINATED WITH SILTY CLAY, MOIST		599.5	30.0	3	15	100	SS-S-10	4.5+	-	-	-	-	-	-	-	-	-	A-4b (V)
			32.5															
			35.0			100	ST-S-11	4.5+	-	-	-	-	NP	NP	NP	21		A-4b (V)
MEDIUM STIFF, GRAY WITH BLACK NODULES, SILT AND CLAY , LAMINATED WITH CLAYEY SILT, WET		591.5	37.5															
			40.0	3	7	100	SS-S-12	1.5-2.5	-	-	-	-	-	-	-	-	-	A-6a (V)
STIFF TO VERY STIFF, GRAY WITH OCCASIONAL BROWN AND BLACK NODULES, SILT AND CLAY TRACE COARSE SAND, LAMINATED WITH CLAYEY SILT, MOIST		587.5	42.5															
			45.0			100	ST-S-13	4.25	-	-	-	-	-	-	-	-	-	A-6a (V)
			47.5															
				3	21	100	SS-S-14	2.5-4.5	-	-	-	-	-	-	-	-	21	A-6a (V)

Figure B-11
Sheet 1 of 6

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:02 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID:		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 158+24, 11.0 RT		START: 11/11/10		END: 11/16/10		PG 2 OF 4		B-046-1-10							
MATERIAL DESCRIPTION AND NOTES			ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.	
										GR	CS	FS	SI	CL	LL	PL	PI				
STIFF TO VERY STIFF, GRAY WITH OCCASIONAL BROWN AND BLACK NODULES, SILT AND CLAY , TRACE COARSE SAND, LAMINATED WITH CLAYEY SILT, MOIST (continued)			577.5	52.5	6 11																
					4 6 9	18	67	SS-S-15	1.75 3.5	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)
MEDIUM STIFF, MEDIUM GRAY, SILT AND CLAY , SLIGHTLY SILTY TO SILTY, WET			570.5	57.5	2 2 3	6	100	SS-S-16	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
					2 2 3	6	100	SS-S-16	-	-	-	-	-	-	-	-	-	-	-	-	-
cobble at 73 feet based on drill action			554.5	65.0			100	ST-S-17	1.00	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
							100	ST-S-17	1.00	-	-	-	-	-	-	-	-	-	-	-	-
STIFF TO VERY STIFF, GRAY WITH OCCASIONAL BROWN NODULES, SILT AND CLAY , TRACE COARSE SAND AND FINE GRAVEL, LAMINATED WITH CLAYEY SILT, WET			554.5	70.0	2 2 4	7	100	SS-S-18	0.75	-	-	-	-	-	33	21	12	25	-	A-6a (V)	
					2 2 4	7	100	SS-S-18	0.75	-	-	-	-	-	33	21	12	25	-	-	-
			554.5	75.0	4 6 8	17	100	SS-S-19	1.5 2.5	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)
					4 6 8	17	100	SS-S-19	1.5 2.5	-	-	-	-	-	-	-	-	-	-	-	-
			554.5	80.0	4 7 10	21	100	SS-S-20	2.5 3.0	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)
					4 7 10	21	100	SS-S-20	2.5 3.0	-	-	-	-	-	-	-	-	-	-	-	-
			554.5	85.0	4 5 8	16	100	SS-S-21	1.75 2.0	-	-	-	-	-	-	-	-	25	-	-	A-6a (V)
					4 5 8	16	100	SS-S-21	1.75 2.0	-	-	-	-	-	-	-	-	-	25	-	-
			554.5	90.0	3 7 8	18	100	SS-S-22	2.25 2.75	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)
					3 7 8	18	100	SS-S-22	2.25 2.75	-	-	-	-	-	-	-	-	-	-	-	-
			554.5	95.0	4 7 10	21	100	SS-S-23	2.5 4.0	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)
					4 7 10	21	100	SS-S-23	2.5 4.0	-	-	-	-	-	-	-	-	-	-	-	-
			554.5	100.0			58	ST-S-24	2.0 2.5	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)
							58	ST-S-24	2.0 2.5	-	-	-	-	-	-	-	-	-	-	-	-
				102.5																	

Figure B-11
Sheet 2 of 6

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:02 - D:\WP\21-121-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT_GPJ

PID: 85531		BR ID:		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 158+24, 11.0 RT		START: 11/11/10		END: 11/16/10		PG 3 OF 4		B-046-1-10											
MATERIAL DESCRIPTION AND NOTES			ELEV. 524.0	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.					
										GR	CS	FS	SI	CL	LL	PL	PI								
STIFF TO VERY STIFF, GRAY WITH OCCASIONAL BROWN NODULES, SILT AND CLAY , TRACE COARSE SAND AND FINE GRAVEL, LAMINATED WITH CLAYEY SILT, WET (continued)				105.0	3 4 7	13	100	SS-S-25	1.25 - 1.75	-	-	-	-	-	-	-	-	-	19	A-6a (V)					
				107.5																					
				110.0	4 7 11	22	67	SS-S-26	1.25 - 1.75	-	-	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)		
				112.5																					
				115.0	4 6 10	20	100	SS-S-27	1.75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
				117.5																					
				120.0	4 6 10	20	100	SS-S-28	1.5 - 2.0	-	-	-	-	-	33	21	12	21					A-6a (V)		
				122.5																					
				125.0					0		ST-S-29	-	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
				127.5																					
				130.0					100		ST-S-30	1.25	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
				132.5																					
				135.0	6 10 15	31	100	SS-S-31	2.25	-	-	-	-	-	-	-	-	-	-	-	-	-	22	A-6a (V)	
				137.5																					
	140.0	3 7 9	20	100	SS-S-32	1.75 - 2.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)				
	142.5																								
	145.0	3 6 6	15	100	SS-S-33	1.25 - 1.75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)				
	147.5																								
	150.0	3 3 6	11	44	SS-S-34	1.0 - 1.75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
	152.5																								
	155.0	6 8 14	27	67	SS-S-35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-4a (V)			
STIFF TO VERY STIFF, GRAY, SANDY SILT , CLAYEY, WET				478.0																					
slightly clayey, silty fine to medium sand layer at 154.7 feet																									

Figure B-11
Sheet 3 of 6

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:02 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID:		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 158+24, 11.0 RT		START: 11/11/10		END: 11/16/10		PG 4 OF 4		B-046-1-10												
MATERIAL DESCRIPTION AND NOTES				ELEV.	DEPTH	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.					
											GR	CS	FS	SI	CL	LL	PL	PI								
HARD, GRAY AND GRAY-BROWN, SANDY SILT, CLAYEY, SLIGHTLY GRAVELLY, MOIST				470.4	157.5	16																				
				469.5	160.0	25	69	100	SS-S-36	-	6	9	12	37	36	25	17	8	12	A-4a (8)						
					162.5	31																				
HARD, GRAY, CLAYEY SILT, TRACE FINE SAND, WET				466.5	165.0	13	83	100	SS-S-37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
					167.5	40																				
silty fine sand layer at 174.7 feet				456.5	170.0	12	65	100	SS-S-38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
					172.5	32																				
HARD, GRAY, SILTY CLAY, TRACE FINE SAND AND GRAVEL, THINLY BEDDED, MOIST				451.5	175.0	14	65	100	SS-S-39	-	0	0	1	-	99	-	-	-	-	-	-	-	-	22	A-4b (V)	
					177.5	30																				
occasional slickensides from 183 to 185 feet				439.5	180.0	26	87	100	SS-S-40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-6b (V)	
					182.5	44																				
HARD, GRAY, SILTY CLAY, TRACE WEATHERED SHALE SAND AND GRAVEL, OCCASIONAL SLICKENSIDES, MOIST				439.5	185.0	13	77	100	SS-S-41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	A-6b (V)	
					187.5	33																				
SHALE, DARK BROWN, HIGHLY WEATHERED, VERY WEAK.				433.0	190.0	11	59	100	SS-S-42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-6b (V)	
					192.5	29																				
SHALE, DARK GRAY TO GRAY, UNWEATHERED, WEAK TO SLIGHTLY STRONG, FISSILE, THIN ZONES OF HIGHLY WEATHERED FRACTURES AT 198.9, 199.8, AND 200.4 FEET; RQD 91.7%, REC 100%.				428.9	195.0	15	-	100	SS-S-43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
					197.5	50/3'																				
SHALE, DARK GRAY TO GRAY, UNWEATHERED, WEAK TO SLIGHTLY STRONG, FISSILE, THIN ZONES OF HIGHLY WEATHERED FRACTURES AT 198.9, 199.8, AND 200.4 FEET; RQD 91.7%, REC 100%.				418.9	200.0	50/1"	-	100	SS-S-44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Rock (V)	
					202.5	83																				
SHALE, DARK GRAY TO GRAY, UNWEATHERED, WEAK TO SLIGHTLY STRONG, FISSILE, THIN ZONES OF HIGHLY WEATHERED FRACTURES AT 198.9, 199.8, AND 200.4 FEET; RQD 91.7%, REC 100%.				418.9	205.0	100			NQ2-2	-																CORE
					207.5																					

EOB

NOTES: NONE
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: USED 75 LB. BENTONITE POWDER; TREMIED 2 BAG CEMENT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:03 - D:\WIP\21-1\21-1-121361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PROJECT: CLEVELAND CENTRAL VIADUCT	DRILLING FIRM / OPERATOR: OHIO TEST BOR / HEPNER	DRILL RIG: SIMCO 2800 HSHT	STATION / OFFSET: 160+56, 8.0 LT
TYPE: BRIDGE REPLACEMENT	SAMPLING FIRM / LOGGER: S&W / WIENERS	HAMMER: SIMCO AUTOMATIC	ALIGNMENT: CENTERLINE
PID: 85531 BR ID:	DRILLING METHOD: 3.25" HSA / NQ2	CALIBRATION DATE: 1/14/11	ELEVATION: 665.0 (MSL) EOB: 238.6 ft.
START: 1/4/11 END: 1/7/11	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 73.5	COORD: 666222.890 N, 2191299.720 E

EXPLORATION ID
B-047-3-10
PAGE
1 OF 5

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				INST.
								GR	CS	FS	SI	CL	LL	PL	PI	WC	
Asphalt and granular base	665.0																
LOOSE, BROWN, FINE SAND, TRACE SILT, TRACE COARSE SAND, MOIST Fill - hydrocarbon odor	663.2	2.5	5	12	94	SS-S-1	-	-	-	-	-	-	-	-	-	-	A-3 (V)
interbedded clay and medium sand from 5.0 to 6.5 feet	FS	5.0	3	6	44	SS-S-2	-	-	-	-	-	-	-	-	-	-	A-3 (V)
		7.5	2	7	83	SS-S-3	-	-	-	-	-	-	-	-	-	-	A-3 (V)
color grades to gray and brown at 13 feet	FS	10.0	2	9	44	SS-S-4	-	-	-	-	-	-	-	-	-	-	A-3 (V)
		12.5	2	6	100	SS-S-5	-	-	-	-	-	-	-	-	-	-	A-3 (V)
grades to medium dense at 16 feet	FS	15.0	3	9	72	SS-S-6	-	-	-	-	-	-	-	-	-	-	A-3 (V)
		17.5	5	15	100	SS-S-7	-	-	-	-	-	-	-	-	-	-	A-3 (V)
MEDIUM DENSE, BROWN, SANDY SILT, MOIST hydrocarbon odor	646.5	17.5	5	21	89	SS-S-8	-	-	-	-	-	-	-	-	-	-	
MEDIUM DENSE, BROWN, FINE SAND, TRACE SILT, MOIST hydrocarbon odor	646.0	20.0	5	18	89	SS-S-9	-	-	-	-	-	-	-	-	-	-	A-3 (V)
wet below 30 feet	FS	25.0	4	21	94	SS-S-10	-	-	-	-	-	-	-	-	-	-	A-3 (V)
		30.0	6	28	94	SS-S-11	-	-	-	-	-	-	-	-	-	-	A-3 (V)
MEDIUM DENSE, GRAY, SILT, TRACE FINE SAND, WET moderate hydrocarbon odor	630.0	35.0	8	21	83	SS-S-12	-	-	-	-	-	-	-	-	-	-	A-4b (V)
MEDIUM DENSE, GRAY, COARSE AND FINE SAND TRACE SILT, WET slight hydrocarbon odor	625.5	40.0	5	13	67	SS-S-13	-	-	-	-	-	-	-	-	-	-	A-4a (V)
MEDIUM DENSE, GRAY, SANDY SILT, WET slight hydrocarbon odor	623.0	42.5	1	20	100	SS-S-14	-	-	-	-	-	-	-	-	-	-	A-4a (V)
VERY STIFF, GRAY, SILT, SLIGHTLY CLAYEY, MOIST	618.0	47.5	4														

Figure B-12
Sheet 1 of 5

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:03 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID: _____		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 160+56, 8.0 LT		START: 1/4/11		END: 1/7/11		PG 2 OF 5		B-047-3-10								
MATERIAL DESCRIPTION AND NOTES			ELEV. 615.0	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.		
										GR	CS	FS	SI	CL	LL	PL	PI					
VERY STIFF, GRAY, SILT, SLIGHTLY CLAYEY, MOIST <i>(continued)</i>				52.5	8																	
				55.0	5 9 11	24	100	SS-S-15	4.50	-	-	-	-	-	-	-	-	-	-	A-4b (V)		
				60.0	4 6 10	20	100	SS-S-16	4.50	-	-	-	-	-	-	-	-	22		A-4b (V)		
				65.0			79	ST-S-17	2.50	-	-	-	-	-	-	-	-	-	-		A-4b (V)	
				70.0	2 3 3	7	100	SS-S-18	1.50	-	-	-	-	-	30	23	7	29			A-4b (V)	
				75.0	4 8 11	23	100	SS-S-19	4.00	-	-	-	-	-	-	-	-	-	-	-		A-4b (V)
				80.0			83	ST-S-20	4.5+	-	-	-	-	-	-	-	-	-	-	-		A-4b (V)
				85.0	6 11 16	33	72	SS-S-21	4.5+	-	-	-	-	-	-	-	-	21			A-4b (V)	
				90.0	4 6 8	17	100	SS-S-22	3.00	-	-	-	-	-	-	-	-	-	-	-		A-4b (V)
				95.0			71	ST-S-23	2.00	-	-	-	-	-	-	-	-	-	-	-		A-4b (V)
MEDIUM STIFF TO STIFF, GRAY, SILT AND CLAY, MOIST			568.0	97.5																		
				100.0	2 3 3	7	100	SS-S-24	1.00	-	-	-	-	-	-	-	27			A-6a (V)		
				102.5																		

Figure B-12
Sheet 2 of 5

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:03 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID: _____		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 160+56, 8.0 LT		START: 1/4/11		END: 1/7/11		PG 3 OF 5		B-047-3-10								
MATERIAL DESCRIPTION AND NOTES			ELEV. 561.5	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.		
										GR	CS	FS	SI	CL	LL	PL	PI					
MEDIUM STIFF TO STIFF, GRAY, SILT AND CLAY, MOIST <i>(continued)</i>			561.5	105.0	1	5	100	SS-S-25	0.50	-	-	-	-	-	-	-	-	-	-	A-6a (V)		
				107.5	3																	
				110.0		79	ST-S-26	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)
				112.5																		
				115.0	WOH 1	6	100	SS-S-27	1.00	-	-	-	-	-	36	22	14	28				A-6a (V)
VERY STIFF TO HARD, GRAY, SILT AND CLAY, MOIST			541.5	117.5	4																	
				120.0	2 5	15	100	SS-S-28	1.00	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
				122.5	7																	
				125.0	5 8	23	100	SS-S-29	2.50	-	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)
				127.5	11																	
				130.0	5 8	23	72	SS-S-30	2.00	-	-	-	-	-	-	-	-	-	24			A-6a (V)
				132.5	11																	
				135.0	8 11	33	67	SS-S-31	2.50	-	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)
				137.5	16																	
				140.0	7 12	33	83	SS-S-32	3.00	-	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)
trace fine gravel below 148 feet			541.5	142.5	15																	
				145.0	5 9	24	100	SS-S-33	2.50	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
				147.5	11																	
				150.0	7 14	44	72	SS-S-34	3.50	-	-	-	-	-	34	20	14	19			A-6a (V)	
				152.5	22																	
155.0	9 14	47	83	SS-S-35	3.50	-	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)				
				14	24																	

Figure B-12
Sheet 3 of 5

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:03 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID:		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 160+56, 8.0 LT		START: 1/4/11		END: 1/7/11		PG 4 OF 5		B-047-3-10								
MATERIAL DESCRIPTION AND NOTES			ELEV. 508.0	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.		
										GR	CS	FS	SI	CL	LL	PL	PI					
VERY STIFF TO HARD, GRAY, SILT AND CLAY, MOIST <i>(continued)</i>			478.0	157.5	5	31	83	SS-S-36	3.00	-	-	-	-	-	-	-	-	-	A-6a (V)			
				160.0	10	15																
				162.5	6	8	24	100	SS-S-37	2.50	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
				165.0	12																	
				167.5	5	11	34	100	SS-S-38	3.00	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
				170.0	17																	
				172.5	6	11	31	100	SS-S-39	2.50	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
				175.0	14																	
				177.5	5	7	21	100	SS-S-40	2.50	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
				180.0	10																	
STIFF, GRAY, SILT, TRACE TO SLIGHTLY CLAYEY, MOIST			478.0	182.5	4	15	100	SS-S-41	1.50	-	-	-	-	-	-	-	-	-	A-6a (V)			
				185.0	5	7																
DENSE TO VERY DENSE, GRAY, COARSE AND FINE SAND, SLIGHTLY SILTY, SLIGHTLY CLAYEY, TRACE GRAVEL GRADES TO GRAVELLY, WET			470.6	187.5	6	11	61	SS-S-42	1.00	-	-	-	-	-	-	-	-	-	A-4b (V)			
				190.0	5	4																
				192.5	5	14	54	100	SS-S-43	1.00	-	-	-	-	-	-	-	-	-	-		
HARD, GRAY, SILT AND CLAY, MOIST			464.0	195.0	30																	
				197.5	26	39	99	72	SS-S-44	-	46	23	13	-	18	-	-	-	-	10	A-3a (V)	
			464.0	200.0	42																	
				202.5	19	31	91	72	SS-S-45	4.5+	-	-	-	-	-	-	-	-	-	A-6a (V)		
				205.0	43																	
				207.5	22	33	86	72	SS-S-46	4.5+	-	-	-	-	-	-	-	-	A-6a (V)			
				210.0																		

Figure B-12
Sheet 4 of 5

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:03 - D:\WIP\21-121-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT_PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID: _____		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 160+56, 8.0 LT		START: 1/4/11		END: 1/7/11		PG 5 OF 5		B-047-3-10						
MATERIAL DESCRIPTION AND NOTES			ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.
										GR	CS	FS	SI	CL	LL	PL	PI			
HARD, GRAY, SILT AND CLAY, MOIST (continued)			454.4		37															
					12	38	89	SS-S-47	3.50	-	-	-	-	-	-	-	-	A-6a (V)		
			448.0		13															
					18															
VERY DENSE, GRAY, SANDY SILT, FINE GRAVELLY, THIN, MOIST, SILTY FINE SAND LAYER AT BASE, MOIST					19	82	72	SS-S-48	-	18	9	22	-	51	-	-	-	13	A-4a (V)	
					25															
					42															
silty fine sand layer at base			440.8		21	75	100	SS-S-49	4.5+	-	-	-	-	-	-	-	-			
HARD, GRAY, SILTY CLAY					27															
					34															
					16	83	83	SS-S-50	4.5+	-	-	-	-	-	-	-	-	17	A-6b (V)	
					23															
					45															
grades to gravelly (weathered shale fragments)			431.0		48	-	100	SS-S-51	-	-	-	-	-	-	-	-	-			
SHALE, DARK GRAY, HIGHLY TO MODERATELY WEATHERED, SLIGHTLY TO MODERATELY STRONG, THINLY LAMINATED.				TR	50/3"															
			426.4		50/1"	-	100	SS-S-52	-	-	-	-	-	-	-	-	-			
				EOB																

NOTES: NONE
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: NOT RECORDED

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 3/22/13 04:38 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PROJECT: CLEVELAND CENTRAL VIADUCT	DRILLING FIRM / OPERATOR: OHIO TEST BOR / L. GIBBONS	DRILL RIG: DIEDRICH D-50	STATION / OFFSET: 159+60, 274.0 LT
TYPE: BRIDGE REPLACEMENT	SAMPLING FIRM / LOGGER: OHIO TEST BORE / ND	HAMMER: DIEDRICH AUTOMATIC	ALIGNMENT: CENTERLINE
PID: 85531 BR ID:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 10/11/11	ELEVATION: 637.8 (MSL) EOB: 30.0 ft.
START: 11/3/11 END: 11/3/11	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 84	LAT / LONG: Not Recorded

EXPLORATION ID B-047-5-11
PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				ODOT CLASS (GI)	INST.	
								GR	CS	FS	SI	CL	LL	PL	PI	WC			
VERY LOOSE, BROWN WTH BLACK, UNCONTROLLED FILL, SILTY FINE SAND/FINE SANDY SILT W/CINDERS AND LITHIC FRAGMENTS, DAMP TO MOIST	637.8	2.5	3	4	67	SS-S-1	-	-	-	-	-	-	-	-	-	-	-	A-2-4 (V)	
	631.8	5.0	2	4	67	SS-S-2	-	-	-	-	-	-	-	-	-	-	-	A-2-4 (V)	
LOOSE, GREY-BROWN, SILT, TRACE FINE SAND AND TRACE CLAY, DAMP TO MOIST	629.8	7.5	3	8	100	SS-S-3	-	-	-	-	-	23	19	4	18		A-4b (V)		
MEDIUM DENSE, GREY-BROWN, SILT, TRACE FINE SAND, TRACE OF ORGANIC DEBRIS FROM 14 FEET TO 18 FEET, DAMP TO MOIST with wet, silty fine sand seams; seepage observed from 11 feet to 16 feet	607.8	10.0	3	15	100	SS-S-4	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
		12.5	8	24	100	SS-S-5	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
		15.0	3	17	100	SS-S-6	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
		17.5	4	17	100	SS-S-7	-	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)
		20.0	4	24	100	SS-S-8	-	-	-	-	-	-	25	23	2	17		A-4b (V)	
		25.0	8	20	100	SS-S-9	-	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)
		27.5	10	21	100	SS-S-10	-	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)
		30.0	8																

NOTES: NO WATER LEVEL OBSERVED AT TIME OF DRILLING; SAMPLES LOGGED BY OTB, SAMPLES REVIEWED BY S&W
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: NOT RECORDED

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT.GDT - 3/22/13 04:38 - D:\WP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PROJECT: CLEVELAND CENTRAL VIADUCT		DRILLING FIRM / OPERATOR: OHIO TEST BOR / L. GIBSON		DRILL RIG: DIEDRICH D-50		STATION / OFFSET: 159+97, 253.0 LT		EXPLORATION ID: B-047-6-11														
TYPE: BRIDGE REPLACEMENT		SAMPLING FIRM / LOGGER: OHIO TEST BORE / ND		HAMMER: DIEDRICH AUTOMATIC		ALIGNMENT: CENTERLINE		PAGE 1 OF 2														
PID: 85531 BR ID:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 10/11/11		ELEVATION: 667.2 (MSL) EOB: 60.0 ft.																
START: 11/4/11 END: 11/4/11		SAMPLING METHOD: SPT / ST		ENERGY RATIO (%): 84		LAT / LONG: Not Recorded																
MATERIAL DESCRIPTION AND NOTES			ELEV.	DEPTH	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.		
										GR	CS	FS	SI	CL	LL	PL	PI					
BROWN/BLACK, UNCONTROLLED FILL, SLIGHTLY GRAVELLY TO GRAVELLY SILTY SAND, WITH CINDERS AND LITHIC GRAVEL, TRACE FINE ROOTLETS, DAMP TO MOIST with 1.5 ft granite boulders and pavers			664.7	2.5			-	BS-S-1	-	-	-	-	-	-	-	-	-	-	-	-	A-2-4 (V)	
VERY LOOSE, BROWN, GRAVEL AND/OR STONE FRAGMENTS WITH SAND TRACE CLAY PARTINGS, DAMP TO MOIST trace clay partings at 6 feet			659.2	5.0	2	4	67	SS-S-2	-	-	-	-	-	-	-	-	-	-	-	-	A-1-b (V)	
				7.5	2	6	44	SS-S-3	-	-	-	-	-	-	-	-	-	-	-	-	A-1-b (V)	
LOOSE, BROWN, COARSE AND FINE SAND SLIGHTLY GRADING TO TRACE FINE GRAVELLY, DAMP TO MOIST			654.7	10.0	2	7	67	SS-S-4	-	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
				12.5	2	11	83	SS-S-5	-	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
LOOSE TO MEDIUM DENSE, BROWN, FINE SAND, SLIGHTLY SILTY TO SILTY, DAMP TO MOIST very thin silt laminae from 13.5 to 15 feet			643.7	15.0	5	14	89	SS-S-6	-	-	-	-	-	-	-	-	-	-	-	-	A-3 (V)	
				17.5	5	13	100	SS-S-7	-	-	-	-	-	-	-	-	-	-	-	-	A-3 (V)	
				20.0	6	20	100	SS-S-8	-	-	-	-	-	-	-	-	-	-	-	-	A-3 (V)	
MEDIUM DENSE, GREY BROWN, SILT, FEW CLAY LAMELLAE, DAMP TO MOIST				25.0	10	36	100	SS-S-9	-	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
GREY, FINE SAND, TRACE TO SLIGHTLY SILTY				30.0	5	15	100	SS-S-10	-	-	-	-	-	-	-	-	-	-	-	-	A-3 (V)	
wet seams from 33.5 feet to 43.5 feet				35.0	7	21	100	SS-S-11	-	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
				40.0	6	20	100	SS-S-12	-	-	-	-	-	-	25	20	5	17	-	-	A-4b (V)	
MEDIUM DENSE, GREY BROWN, SANDY SILT, WET			623.7	42.5																		
STIFF TO HARD, GREY BROWN, SILT, SCATTERED SILTY CLAY SEAMS, DAMP TO MOIST			622.2	45.0	6	18	100	SS-S-13	-	-	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
trace of scattered black carbonaceous debris from 48.5 to 50				47.5																		
				50.0	5	20	100	SS-S-14	-	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)	

Figure B-14
Sheet 1 of 2

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 3/22/13 04:38 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT_PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID: _____		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 159+97, 253.0 LT		START: 11/4/11		END: 11/4/11		PG 2 OF 2		B-047-6-11						
MATERIAL DESCRIPTION AND NOTES				ELEV. 617.2	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			ODOT CLASS (GI)	INST.
											GR	CS	FS	SI	CL	LL	PL	PI		
feet wet seams from 45 feet to 51 feet STIFF TO HARD, GREY BROWN, SILT , SCATTERED SILTY CLAY SEAMS, DAMP TO MOIST (continued)				610.2	52.5	6														
					55.0	20 32 28	84	89	SS-S-15	-	-	-	-	-	-	-	-	-	-	-
VERY STIFF, GREY BROWN, SILT AND CLAY , MOIST TO WET				607.2	57.5															
					60.0	7 8 10	25	56	SS-S-16	-	-	-	-	-	31	20	11	21		A-6a (V)
					EOB															

NOTES: SAMPLES LOGGED BY OTB, SAMPLES REVIEWED BY S&W
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: NOT RECORDED

Figure B-14
 Sheet 2 of 2

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:03 - D:\WIP\21-121-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT_PROJECT\21-21361_CURRENT.GPJ

PROJECT: CLEVELAND CENTRAL VIADUCT		DRILLING FIRM / OPERATOR: OHIO TEST BOR / HEPNER		DRILL RIG: SIMCO 2800 HSHT		STATION / OFFSET: 162+28, 10.0 RT		EXPLORATION ID: B-048-1-10										
TYPE: BRIDGE REPLACEMENT		SAMPLING FIRM / LOGGER: S&W / DUTT		HAMMER: SIMCO AUTOMATIC		ALIGNMENT: CENTERLINE		PAGE 1 OF 5										
PID: 85531 BR ID:		DRILLING METHOD: 3.25" HSA / NQ2		CALIBRATION DATE: 1/14/11		ELEVATION: 669.3 (MSL) EOB: 255.0 ft.												
START: 12/8/10 END: 12/15/10		SAMPLING METHOD: SPT / ST		ENERGY RATIO (%): 73.5		COORD: 666350.640 N, 2191425.770 E												
MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.
								GR	CS	FS	SI	CL	LL	PL	PI			
ASPHALT	668.7		8															
VERY STIFF, GRAY-BROWN, SILT, SANDY, TRACE BRICK FRAGMENTS, MOIST Fill	666.3	2.5	8	20	100	SS-S-1	-	-	-	-	-	-	-	-	-	-	-	A-4a (V)
VERY LOOSE, BROWN TO GRAY, COARSE AND FINE SAND, GRAVELLY, COAL AND BRICK FRAGMENTS, MOIST Fill		5.0	2	5	100	SS-S-2	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
		7.5	1	5	89	SS-S-3	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
		10.0	2	4	100	SS-S-4	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
	656.3	12.5	2	5	100	SS-S-5	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
LOOSE, BROWN, SANDY SILT, MOIST	654.8	15.0	2	10	100	SS-S-6	-	-	-	-	-	-	-	-	-	-	-	A-4a (V)
LOOSE, BROWN, COARSE AND FINE SAND GRAVELLY, MOIST		17.5	2	4	100	SS-S-7	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
LOOSE, BROWN, FINE SAND, MOIST	651.3	20.0	2	6	100	SS-S-8	-	-	-	-	-	-	-	-	-	-	-	
LOOSE, BROWN, SANDY SILT, WET	649.8	22.5	2															
	645.3	25.0	5	12	100	SS-S-9	-	-	-	-	-	-	-	-	-	-	-	
LOOSE TO MEDIUM DENSE, BROWN, FINE SAND, MOIST		27.5	5															
	637.8	30.0	8	17	100	SS-S-10	-	-	-	-	-	-	-	-	-	-	4	A-3 (V)
MEDIUM DENSE, GRAY-BROWN, COARSE AND FINE SAND, SILTY, WET		32.5	5															
	632.8	35.0	7	21	100	SS-S-11	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
MEDIUM STIFF, GRAY, SILTY CLAY, SLIGHTLY SANDY, WET		37.5	4	9	100	SS-S-12	2.50	-	-	-	-	-	-	-	-	-	19	A-6b (V)
	627.8	40.0	3															
MEDIUM DENSE, GRAY, COARSE AND FINE SAND SILTY, WET		42.5	11	31	100	SS-S-13	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
		45.0	12															
		47.5	13															
			8	24	100	SS-S-14	-	-	-	-	-	-	-	-	-	-	19	A-3a (V)

Figure B-13
Sheet 1 of 7

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT. GDT - 2/12/13 07:03 - D:\WP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID:		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 162+28, 10.0 RT		START: 12/8/10		END: 12/15/10		PG 2 OF 5		B-048-1-10																
MATERIAL DESCRIPTION AND NOTES				ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.									
											GR	CS	FS	SI	CL	LL	PL	PI												
STIFF TO HARD, GRAY, CLAYEY SILT, TRACE FINE SHALE GRAVEL, MOIST				619.3																										
						9																								
						4	13	100	SS-S-15	1.75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)			
						5																								
						6																								
						2	15	100	SS-S-16	3.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)		
						4																								
						8																								
											96		ST-S-17	4.5+	-	-	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)		
						5	26	100	SS-S-18	4.5+	-	-	-	-	-	30	22	8	21									A-4b (V)		
						9																								
						12																								
						2	9	100	SS-S-19	0.75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)		
						3																								
		4																												
							96		ST-S-20	4.50	-	-	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)						
		5	21	94	SS-S-21	3.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)						
		8																												
		9																												
		2	7	67	SS-S-22	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)						
		3																												
		3																												
							96		ST-S-23	1.50	-	-	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)						
		5	21	100	SS-S-24	1.50	-	-	-	-	-	32	22	10	25									A-4b (V)						
		7																												
		10																												
MEDIUM STIFF TO STIFF, GRAY, SILT AND CLAY WET				567.8																										

Figure B-13
Sheet 2 of 7

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:03 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID:		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 162+28, 10.0 RT		START: 12/8/10		END: 12/15/10		PG 3 OF 5		B-048-1-10							
MATERIAL DESCRIPTION AND NOTES			ELEV. 565.7	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.	
										GR	CS	FS	SI	CL	LL	PL	PI				
MEDIUM STIFF TO STIFF, GRAY, SILT AND CLAY, WET <i>(continued)</i>			545.8	105.0	2 3 4	9	100	SS-S-25	0.75	-	-	-	-	-	-	-	-	-	A-6a (V)		
				107.5																	
				110.0			96	ST-S-26	0.75	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)
				112.5																	
VERY STIFF TO HARD, GRAY, SILT AND CLAY, MOIST			545.8	115.0	WOH 2 3	6	0	SS-S-27	-	-	-	-	-	-	-	-	-	-	A-6a (V)		
				117.5																	
				120.0	2 4 5	11	100	SS-S-28	0.50	-	-	-	-	-	32	21	11	23		A-6a (V)	
				122.5																	
VERY STIFF TO HARD, GRAY, SILT AND CLAY, MOIST			545.8	125.0			83	ST-S-29	2.75	-	-	-	-	-	-	-	-	-	A-6a (V)		
				127.5																	
				130.0	5 8 11	23	100	SS-S-30	1.50	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)
				132.5																	
VERY STIFF TO HARD, GRAY, SILT AND CLAY, MOIST			545.8	135.0	6 9 13	27	100	SS-S-31	2.00	-	-	-	-	-	-	-	-	-	A-6a (V)		
				137.5																	
				140.0	6 10 12	27	100	SS-S-32	1.50	-	-	-	-	-	-	-	-	26		A-6a (V)	
				142.5																	
STIFF TO VERY STIFF, GRAY, SILT AND CLAY, TRACE FINE SHALE GRAVEL, MOIST			527.8	145.0	6 12 16	34	100	SS-S-33	3.50	-	-	-	-	-	-	-	-	-	A-6a (V)		
				147.5																	
				150.0	5 7 11	22	100	SS-S-34	1.00	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
				152.5																	
STIFF TO VERY STIFF, GRAY, SILT AND CLAY, TRACE FINE SHALE GRAVEL, MOIST			527.8	155.0	7 6 7	16	100	SS-S-35	-	-	-	-	-	-	-	-	-	-	A-6a (V)		

Figure B-13
Sheet 3 of 7

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT. GDT - 2/12/13 07:03 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID:		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 162+28, 10.0 RT		START: 12/8/10		END: 12/15/10		PG 4 OF 5		B-048-1-10																
MATERIAL DESCRIPTION AND NOTES				ELEV. 512.2	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.									
											GR	CS	FS	SI	CL	LL	PL	PI												
STIFF TO VERY STIFF, GRAY, SILT AND CLAY, TRACE FINE SHALE GRAVEL, MOIST (continued)				497.8	157.5	4																								
					160.0	9	22	100	SS-S-36	1.50	-	-	-	-	-	29	18	11	18	A-6a (V)										
					162.5	5																								
STIFF TO VERY STIFF, GRAY, SILTY CLAY, MOIST				471.8	165.0	8	26	100	SS-S-37	1.75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)				
					167.5	13																								
					170.0	6	28	100	SS-S-38	2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
STIFF TO VERY STIFF, GRAY, SILTY CLAY, MOIST				471.8	172.5	7																								
					175.0	12	36	100	SS-S-39	3.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-6b (V)	
					177.5	6	29	100	SS-S-40	2.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-6b (V)	
STIFF TO VERY STIFF, GRAY, SILTY CLAY, MOIST				471.8	180.0	10																								
					182.5	4	22	100	SS-S-41	2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-6b (V)	
					185.0	8	12	100	SS-S-42	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-6b (V)	
HARD, GRAY, SANDY SILT, SLIGHTLY CLAYEY, SLIGHTLY GRAVELLY TO GRAVELLY, MOIST				471.8	187.5	3	12	100	SS-S-43	1.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-6b (V)			
					190.0	7	20	100	SS-S-44	1.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-6b (V)	
					192.5	10	70	67	SS-S-45	4.5+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
HARD, GRAY, SANDY SILT, SLIGHTLY CLAYEY, SLIGHTLY GRAVELLY TO GRAVELLY, MOIST				471.8	195.0	7	20	100	SS-S-43	1.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-6b (V)			
					197.5	10	70	67	SS-S-44	4.5+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
					200.0	24																								
HARD, GRAY, SANDY SILT, SLIGHTLY CLAYEY, SLIGHTLY GRAVELLY TO GRAVELLY, MOIST				471.8	202.5	13	72	83	SS-S-45	4.5+	10	12	12	-	66	-	25	16	9	13							A-4 (6)			
					205.0	25																								
					207.5	16	91	72	SS-S-46	4.5+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-4a (V)
HARD, GRAY, SANDY SILT, SLIGHTLY CLAYEY, SLIGHTLY GRAVELLY TO GRAVELLY, MOIST				471.8	210.0	32																								

Figure B-13
Sheet 4 of 7

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:03 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT_PROJECT\21-21361_CURRENT.GPJ

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTH	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.	
								GR	CS	FS	SI	CL	LL	PL	PI				
HARD, GRAY, SANDY SILT, SLIGHTLY CLAYEY, SLIGHTLY GRAVELLY TO GRAVELLY, MOIST (continued)	458.6		42																
			212.5																
VERY DENSE, GRAY, GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT, WET	452.3		12 35 34	85	83	SS-S-47	4.5+	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
			215.0																
			217.5																
			220.0	24 42 43	104	83	SS-S-48	-	31	24	15	-	30	-	-	-	-	11	A-2-4 (V)
possible shale cobbles and boulders based on drill action from 230 feet to 245 feet	424.3	TR	55 56	-	50	SS-S-49	-	-	-	-	-	-	-	-	-	-	-	A-2-4 (V)	
			225.0																
			227.5																
SHALE GRAY TO OLIVE-GRAY, UNWEATHERED, MODERATELY STRONG, LAMINATED, WIDE SPACED BEDDING JOINTS; RQD 100%, REC 100%.	414.3	EOB	60/4"	-	100	SS-S-50	-	-	-	-	-	-	-	-	-	-	-		
			230.0																
			232.5																
	424.3	TR																	
			245.0																
	414.3	EOB		100	100	NQ2-1												CORE	
			247.5																
	414.3	EOB		100	100	NQ2-2												CORE	
			250.0																
	414.3	EOB																	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: USED 75 LB. BENTONITE POWDER; USED 3 BAG CEMENT; TREMIED 160 GAL. WATER

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:03 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PROJECT: CLEVELAND CENTRAL VIADUCT		DRILLING FIRM / OPERATOR: PRO GEOTECH / FAY		DRILL RIG: MOBILE B-57		STATION / OFFSET: 701+32, 40.0 LT		EXPLORATION ID: B-051-1-10															
TYPE: BRIDGE REPLACEMENT		SAMPLING FIRM / LOGGER: S&W / TABOR		HAMMER: MOBILE AUTOMATIC		ALIGNMENT: CENTERLINE		PAGE 1 OF 5															
PID: 85531 BR ID:		DRILLING METHOD: 3.25" HSA / NQ2		CALIBRATION DATE: 1/14/11		ELEVATION: 626.2 (MSL) EOB: 218.0 ft.																	
START: 12/14/10 END: 12/17/10		SAMPLING METHOD: SPT / ST		ENERGY RATIO (%): 81.3		COORD: 666534.760 N, 2191512.640 E																	
MATERIAL DESCRIPTION AND NOTES			ELEV.	DEPTH	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.			
			626.2							GR	CS	FS	SI	CL	LL	PL	PI						
LOOSE, GRAY, GRAVEL Fill			623.2	2.5	4	12	72	SS-S-1	-	-	-	-	-	-	-	-	-	-	-	-	-	A-1-a (V)	
STIFF TO VERY STIFF, GRAY, SILT, TRACE ORGANICS, MOIST				5.0	5	18	94	SS-S-2	3.00	-	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
				7.5	4	14	89	SS-S-3	-	-	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
				10.0	3	22	89	SS-S-4	3.50	-	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
				12.5	7	23	94	SS-S-5	4.5+	-	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
				15.0	4	15	89	SS-S-6	4.00	-	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
				17.5			92	ST-S-7	4.5+	-	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
				20.0	3	15	100	SS-S-8	-	-	-	-	-	-	-	-	-	-	20	-	-	A-4b (V)	
thin silty sand layer at 24 ft.				25.0	5	19	100	SS-S-9	4.50	-	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
SOFT, GRAY, CLAY, TRACE ORGANICS, WET			599.2	27.5																			
				30.0	2	5	100	SS-S-10	0.75	-	-	-	-	-	-	-	-	-	29	-	-	A-7-6 (V)	
STIFF TO VERY STIFF, GRAY, SILT AND CLAY, TRACE ORGANICS, WET			595.2	32.5			121	ST-S-11	3.5-4.0	-	-	-	-	-	-	-	-	-	-	-	-		
				35.0	3	15	100	SS-S-12	3.75-4.0	-	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
				40.0	4	22	100	SS-S-13	4.5+	-	-	-	-	-	32	20	12	20	-	-	-	A-6a (V)	
				45.0	3	16	100	SS-S-14	3.00	-	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
				47.5																			
					3	16	100	SS-S-15	2.00	-	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)	

Figure B-14
Sheet 1 of 6

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:03 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID:		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 701+32, 40.0 LT		START: 12/14/10		END: 12/17/10		PG 2 OF 5		B-051-1-10						
MATERIAL DESCRIPTION AND NOTES			ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			ODOT CLASS (GI)	INST.	
										GR	CS	FS	SI	CL	LL	PL	PI			WC
SOFT TO MEDIUM STIFF, GRAY, CLAY, WET			574.2		5															
			52.5		7															
			55.0			75	ST-S-16	0.75	-	-	-	-	-	-	-	-	-	-	-	A-7-6 (V)
			57.5																	
			60.0		2	5	100	SS-S-17	0.50	-	-	-	-	-	-	-	-	-	-	A-7-6 (V)
			62.5																	
			65.0		WOH	7	100	SS-S-18	0.00	-	-	-	-	-	42	25	17	34		A-7-6 (V)
			67.5																	
			70.0		1	5	100	SS-S-19	0.00	-	-	-	-	-	-	-	-	-	-	A-7-6 (V)
			72.5																	
MEDIUM STIFF TO STIFF, GRAY, CLAY, MOIST			549.2																	
			75.0			117	ST-S-20	0.25	-	-	-	-	-	-	-	-	-	-	A-7-6 (V)	
			77.5																	
			80.0		2	11	100	SS-S-21	0.75	-	-	-	-	-	-	-	-	-	-	A-7-6 (V)
			82.5																	
			85.0		3	18	100	SS-S-22	2.00	-	-	-	-	-	-	-	-	-	-	A-7-6 (V)
			87.5																	
			90.0		4	23	100	SS-S-23	3.00	-	-	-	-	-	-	-	-	23		A-6a (V)
			92.5																	
			95.0		5	30	100	SS-S-24	3.25	-	-	-	-	-	31	19	12	23		A-6a (V)
VERY STIFF, GRAY, SILT AND CLAY MOIST			539.2																	
			97.5																	
			100.0		4	23	100	SS-S-25	2.75	-	-	-	-	-	-	-	-	-	A-6a (V)	
			102.5																	
			524.2																	

Figure B-14
Sheet 2 of 6

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:03 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID:		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 701+32, 40.0 LT		START: 12/14/10		END: 12/17/10		PG 3 OF 5		B-051-1-10						
MATERIAL DESCRIPTION AND NOTES			ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.
										GR	CS	FS	SI	CL	LL	PL	PI			
VERY STIFF, GRAY, SILT AND CLAY, TRACE SHALE FRAGMENTS, MOIST (continued)			522.6	105.0	5	23	100	SS-S-26	2.50	-	-	-	-	-	34	22	12	24	A-6a (V)	
					7					10										
STIFF, GRAY, SANDY SILT, "AND" CLAY, TRACE SHALE FRAGMENTS, MOIST			514.2	110.0		117		ST-S-27	2.50	-	-	-	-	-	-	-	-	-	A-6a (V)	
STIFF TO VERY STIFF, GRAY, SILT AND CLAY, TRACE SHALE FRAGMENTS, MOIST			509.2	115.0	5	15	100	SS-S-28	-	4	4	10	36	46	26	17	9	18	A-4a (8)	
					6															
STIFF TO VERY STIFF, GRAY, SILT AND CLAY, TRACE SHALE FRAGMENTS, MOIST			476.2	120.0	4	19	100	SS-S-29	1.25	-	-	-	-	-	-	-	-	-	A-6a (V)	
					6					8										
STIFF TO VERY STIFF, GRAY, SILT AND CLAY, TRACE SHALE FRAGMENTS, MOIST			476.2	125.0	5	23	67	SS-S-30	1.00	-	-	-	-	-	-	-	-	-	A-6a (V)	
					8					9										
STIFF TO VERY STIFF, GRAY, SILT AND CLAY, TRACE SHALE FRAGMENTS, MOIST			476.2	130.0	4	22	100	SS-S-31	2.00	-	-	-	-	-	-	-	-	-	A-6a (V)	
					7					9										
STIFF TO VERY STIFF, GRAY, SILT AND CLAY, TRACE SHALE FRAGMENTS, MOIST			476.2	135.0	6	27	100	SS-S-32	2.00	1	2	2	29	66	35	22	13	23	A-6a (9)	
					8					12										
STIFF TO VERY STIFF, GRAY, SILT AND CLAY, TRACE SHALE FRAGMENTS, MOIST			476.2	140.0	6	28	89	SS-S-33	2.50	-	-	-	-	-	-	-	-	-	A-6a (V)	
					10					11										
STIFF TO VERY STIFF, GRAY, SILT AND CLAY, TRACE SHALE FRAGMENTS, MOIST			476.2	145.0	4	16	100	SS-S-34	1.50	-	-	-	-	-	-	-	-	-	A-6a (V)	
					5					7										
DENSE, GRAY, SILT, TRACE FINE GRAVEL AND COARSE SHALE FRAGMENTS, MOIST			476.2	150.0		100		SS-S-35	1.00	-	-	-	-	-	-	-	-	-	A-4b (V)	
DENSE, GRAY, SILT, TRACE FINE GRAVEL AND COARSE SHALE FRAGMENTS, MOIST			476.2	155.0	10	56	100	SS-S-36	4.5+	-	-	-	-	-	-	-	-	-	A-4b (V)	
					19					22										

Figure B-14
Sheet 3 of 6

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:03 - D:\WIP\21-1\21-1-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT_GPJ

PID: 85531		BR ID:		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 701+32, 40.0 LT		START: 12/14/10		END: 12/17/10		PG 4 OF 5		B-051-1-10						
MATERIAL DESCRIPTION AND NOTES			ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.
										GR	CS	FS	SI	CL	LL	PL	PI			
DENSE, GRAY, SILT , TRACE FINE GRAVEL AND COARSE SHALE FRAGMENTS, MOIST (continued)			469.1	157.5																
				160.0	30 38 34	98	100	SS-S-37	4.5+	4	10	10	- 76 -	NP	NP	NP	15	A-4 (8)		
			461.7	162.5																
VERY DENSE, GRAY, COARSE AND FINE SAND SLIGHTLY GRAVELLY TO GRAVELLY, MOIST			460.7	165.0	11 25 32	77	83	SS-S-38	4.50	-	-	-	-	-	-	-	-	-	-	
HARD, GRAY, SILT , TRACE CLAY, TRACE SHALE FRAGMENTS AND FINE GRAVEL, MOIST				167.5																
				170.0	14 27 31	79	100	SS-S-39	4.50	-	-	-	-	-	-	-	-	-	A-4b (V)	
				172.5																
				175.0	10 18 25	58	100	SS-S-40	2.75	-	-	-	-	-	-	-	-	-	A-4b (V)	
				177.5																
				180.0	11 21 30	69	100	SS-S-41	4.50	-	-	-	-	-	-	-	-	20	A-4b (V)	
			444.2	182.5																
HARD, GRAY, SILT , CLAYEY, SLIGHTLY SANDY TO SANDY, SLIGHTLY GRAVELLY, MOIST				185.0	21 24 22	62	89	SS-S-42	3.00	14	13	12	- 61 -	25	17	8	15	A-4 (5)		
				187.5																
				190.0	17 34 43	104	61	SS-S-43	4.50	-	-	-	-	-	-	-	-	-	A-4b (V)	
				192.5																
			431.7	195.0	7 10 39	66	83	SS-S-44	3.25	-	-	-	-	-	-	-	-	21		
HARD, GRAY, CLAY , TRACE GRAVEL AND VERY WEATHERED SHALE FRAGMENTS, FEW SILTY SAND LENSES, MOIST				197.5																
			427.2	200.0	42 50/1"	-	100	SS-S-45	-	-	-	-	-	-	-	-	-	-	A-7-6 (V)	
SHALE , DARK GRAY, HIGHLY TO SLIGHTLY WEATHERED, WEAK TO SLIGHTLY STRONG, THINLY LAMINATED, FISSILE, CLOSE TO WIDELY SPACED BEDDING PLANE JOINTS, SOME WEATHERING ALONG JOINTS; RQD 59.5%, REC 89.5%.				202.5																
				205.0	50/1"	-	100	SS-S-46	-	-	-	-	-	-	-	-	-	-	Rock (V)	
				207.5																
				210.0																

Figure B-14
Sheet 4 of 6

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:03 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT_GPJ

PID: 85531		BR ID: _____		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 701+32, 40.0 LT		START: 12/14/10		END: 12/17/10		PG 5 OF 5		B-051-1-10													
MATERIAL DESCRIPTION AND NOTES				ELEV. 415.5	DEPTHS		SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.					
												GR	CS	FS	SI	CL	LL	PL	PI								
SHALE , DARK GRAY, HIGHLY TO SLIGHTLY WEATHERED, WEAK TO SLIGHTLY STRONG, THINLY LAMINATED, FISSILE, CLOSE TO WIDELY SPACED BEDDING PLANE JOINTS, SOME WEATHERING ALONG JOINTS; RQD 59.5%, REC 89.5%. <i>(continued)</i>				408.2			64		89	NQ2-1	-													CORE			
						-212.5																					
						-215.0			55		90	NQ2-2	-														
					-217.5																						
					EOB																						

NOTES: NONE
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: NOT RECORDED

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 08:09 - D:\WIP\21-121-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PROJECT: CLEVELAND CENTRAL VIADUCT		DRILLING FIRM / OPERATOR: PRO GEOTECH / FAY		DRILL RIG: MOBILE B-57		STATION / OFFSET: 164+40, 6.0 LT		EXPLORATION ID														
TYPE: BRIDGE REPLACEMENT		SAMPLING FIRM / LOGGER: S&W / TABOR/BUSHER		HAMMER: MOBILE AUTOMATIC		ALIGNMENT: CENTERLINE		B-051-2-10														
PID: 85531 BR ID:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/14/11		ELEVATION: 627.4 (MSL) EOB: 208.6 ft.		PAGE														
START: 12/20/10 END: 12/27/10		SAMPLING METHOD: SPT / ST		ENERGY RATIO (%): 81.3		COORD: 666483.910 N, 2191581.150 E		1 OF 4														
MATERIAL DESCRIPTION AND NOTES			ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			ODOT CLASS (GI)	INST.			
										GR	CS	FS	SI	CL	LL	PL	PI	WC				
LOOSE, BROWN, COARSE AND FINE SANDSILTY, TRACE GRAVEL GRADES TO GRAVELLY, MOIST TO WET Fill			627.4		3	5	83	SS-S-1	-	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
					2																	
					4	8	67	SS-S-2	-	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
VERY LOOSE TO LOOSE, GRAY-BROWN, FINE SAND SLIGHTLY SILTY, WITH TRACE FINE GRAVEL AND SANDY SILT LAYERS, WET			621.9		1	3	72	SS-S-3	-	-	-	-	-	-	-	-	-	-	-	-	A-3 (V)	
					2	5	94	SS-S-4	-	-	-	-	-	-	-	-	-	-	-	-	A-3 (V)	
					2	14	89	SS-S-5	4.50	-	-	-	-	-	-	-	-	-	-	-	A-3 (V)	
STIFF TO VERY STIFF, GRAY, SILT, TRACE ORGANICS, MOIST			614.4	W	2	14	89	SS-S-6	4.50	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
					3	19	89	SS-S-7	4.50	-	-	-	-	-	-	-	-	-	21	-	A-4b (V)	
					3	22	94	SS-S-8	4.50	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
					3	14	100	SS-S-9	4.50	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
MEDIUM STIFF, GRAY, SILT, CLAYEY, MOIST			600.4		2	7	100	SS-S-10	0.75	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
					2																	
STIFF TO VERY STIFF, GRAY, SILT, TRACE TO SLIGHTLY CLAYEY, MOIST			595.4			113		ST-S-11	4.25	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
					5	28	100	SS-S-12	4.50	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
					5	31	100	SS-S-13	4.50	-	-	-	-	-	29	21	8	18	-	-	A-4b (V)	
					4	20	94	SS-S-14	4.00	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)	

Figure B-15
Sheet 1 of 4

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 08:09 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID:		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 164+40, 6.0 LT		START: 12/20/10		END: 12/27/10		PG 2 OF 4		B-051-2-10						
MATERIAL DESCRIPTION AND NOTES			ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.
										GR	CS	FS	SI	CL	LL	PL	PI			
STIFF TO VERY STIFF, GRAY, SILT, TRACE TO SLIGHTLY CLAYEY, MOIST (continued)			577.4		6															
				52.5	4	15	100	SS-S-15	3.00	-	-	-	-	-	-	-	-	-	A-4b (V)	
			570.4	55.0	5															
VERY SOFT, GRAY, CLAY, WET				57.5																
				60.0		117		ST-S-16	0.00	-	-	-	-	-	-	-	-	-	A-7-6 (V)	
				62.5																
				65.0	WOH	0	100	SS-S-17	0.00	-	-	-	-	-	-	-	-	-	A-7-6 (V)	
				67.5	WOH															
				70.0	WOH	0	156	SS-S-18	0.00	-	-	-	-	-	43	26	17	35	A-7-6 (V)	
				72.5																
				75.0		117		ST-S-19	1.00	-	-	-	-	-	-	-	-	-	A-7-6 (V)	
				77.5																
MEDIUM STIFF TO STIFF, GRAY, CLAY, SLIGHTLY SILTY TO SILTY, MOIST			547.9	80.0	WOH	7	133	SS-S-20	1.25	-	-	-	-	-	-	-	-	-	A-7-6 (V)	
				82.5																
				85.0	3	18	100	SS-S-21	1.75	-	-	-	-	-	-	-	-	-	A-7-6 (V)	
			540.4	87.5	4	27	100	SS-S-22	3.00	-	-	-	-	-	-	-	-	20	A-6a (V)	
STIFF TO VERY STIFF, GRAY, SILT AND CLAY, MOIST				90.0	8	31	100	SS-S-23	3.00	-	-	-	-	30	19	11	21		A-6a (V)	
				92.5																
				95.0	5	28	89	SS-S-24	3.25	-	-	-	-	-	-	-	-	-	A-6a (V)	
				97.5																
				100.0	5															
				102.5																

Figure B-15
Sheet 2 of 4

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 08:09 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID: _____		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 164+40, 6.0 LT		START: 12/20/10		END: 12/27/10		PG 3 OF 4		B-051-2-10						
MATERIAL DESCRIPTION AND NOTES			ELEV.	DEPTH	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.
										GR	CS	FS	SI	CL	LL	PL	PI			
STIFF TO VERY STIFF, GRAY, SILT AND CLAY, MOIST <i>(continued)</i>			523.9	105.0	4 7 10	23	100	SS-S-25	2.50	-	-	-	-	-	-	-	-	-	-	A-6a (V)
					trace organics at 108 feet			5 7 9	22	100	SS-S-26	2.00	-	-	-	-	-	36	22	14
trace shale fragments from 112 feet to 127 feet			523.9	110.0	3 6 7	18	100	SS-S-27	1.75	-	-	-	-	-	32	19	13	23	A-6a (V)	
					trace shale fragments from 112 feet to 127 feet															
trace shale fragments from 142 feet to 152 feet			523.9	115.0																
					trace shale fragments from 142 feet to 152 feet															
trace shale fragments from 142 feet to 152 feet			523.9	120.0				100	ST-S-28	0.70	-	-	-	-	-	-	-	-	-	A-6a (V)
					trace shale fragments from 142 feet to 152 feet															
trace shale fragments from 142 feet to 152 feet			523.9	125.0	4 7 10	23	100	SS-S-29	1.50	-	-	-	-	-	-	-	-	-	-	A-6a (V)
					trace shale fragments from 142 feet to 152 feet															
trace shale fragments from 142 feet to 152 feet			523.9	130.0	4 5 11	22	67	SS-S-30	2.00	-	-	-	-	-	-	-	-	-	-	A-6a (V)
					trace shale fragments from 142 feet to 152 feet															
trace shale fragments from 142 feet to 152 feet			523.9	135.0	5 10 13	31	100	SS-S-31	2.50	-	-	-	-	-	35	22	13	23	A-6a (V)	
					trace shale fragments from 142 feet to 152 feet															
trace shale fragments from 142 feet to 152 feet			523.9	140.0	5 9 14	31	100	SS-S-32	3.25	-	-	-	-	-	-	-	-	-	-	A-6a (V)
					trace shale fragments from 142 feet to 152 feet															
trace shale fragments from 142 feet to 152 feet			523.9	145.0	5 9 11	27	100	SS-S-33	3.00	-	-	-	-	-	-	-	-	-	-	A-6a (V)
					trace shale fragments from 142 feet to 152 feet															
trace shale fragments from 142 feet to 152 feet			523.9	150.0	3 4 6	14	100	SS-S-34	1.50	-	-	-	-	-	-	-	-	-	-	A-6a (V)
					trace shale fragments from 142 feet to 152 feet															
STIFF, GRAY, SILT, TRACE SHALE FRAGMENTS AND GRAVEL, MOIST			475.4	152.5																
STIFF, GRAY, SILT, TRACE SHALE FRAGMENTS AND GRAVEL, MOIST			472.4	152.5																
VERY STIFF TO HARD, GRAY, SILT, SLIGHTLY SANDY TO SANDY, TRACE TO SLIGHTLY GRAVELLY, MOIST				155.0				25	ST-S-35	-	-	-	-	-	-	-	-	22	A-4b (V)	

Figure B-15
Sheet 3 of 4

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 08:09 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID:		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 164+40, 6.0 LT		START: 12/20/10		END: 12/27/10		PG 4 OF 4		B-051-2-10									
MATERIAL DESCRIPTION AND NOTES			ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			ODOT CLASS (GI)	INST.				
										GR	CS	FS	SI	CL	LL	PL	PI			WC			
VERY STIFF TO HARD, GRAY, SILT, SLIGHTLY SANDY TO SANDY, TRACE TO SLIGHTLY GRAVELLY, MOIST (continued)			470.3	157.5	12	77	67	SS-S-36	4.5+	-	-	-	-	-	-	-	-	-	-	A-4b (V)			
			160.0	24	33																		
			162.5	10	17	58	83	SS-S-37	4.50	-	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
			165.0	17	26																		
			167.5	9	18	62	83	SS-S-38	4.50	-	-	-	-	-	26	17	9	12			A-4b (V)		
HARD, GRAY, SILT, CLAYEY, WITH SHALE FRAGMENTS, MOIST			449.4	175.0	14	68	67	SS-S-39	3.50	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)		
			177.5	25	46	-	94	SS-S-40	4.5+	-	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
			180.0	46	50/51																		
			182.5	18	30	95	100	SS-S-41	4.5+	-	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
HARD, GRAY, SILT AND CLAY SLIGHTLY SANDY TO SANDY, TRACE SHALE FRAGMENTS, MOIST			434.4	185.0	14	85	92	SS-S-42	4.5+	-	-	-	-	29	19	10	16			A-4b (V)			
			187.5	22	27	77	89	SS-S-43	4.5+	-	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
			190.0	27	30																		
SHALE, DARK GRAY.			426.4	192.5	16	-	104	SS-S-44	4.5+	-	-	-	-	-	-	-	-	-	-	-	A-6a (V)		
			195.0	50/6"																			
SHALE, DARK GRAY.			418.8	200.0	100/1"	-	100	SS-S-45	-	-	-	-	-	-	-	-	-	-	-	-	Rock (V)		
			202.5	100/2"																			
				205.0																			
				207.5																			
				EOB																			

NOTES: PORTLAND GROUT TREMIED FROM BOTTOM, QUANTITIES NOT RECORDED
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: NOT RECORDED

Figure B-15
 Sheet 4 of 4

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:04 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PROJECT: CLEVELAND CENTRAL VIADUCT		DRILLING FIRM / OPERATOR: OHIO TEST BOR / HEPNER		DRILL RIG: SIMCO 2800 HSHT		STATION / OFFSET: 166+88, 22.0 RT		EXPLORATION ID: B-053-2-10											
TYPE: BRIDGE REPLACEMENT		SAMPLING FIRM / LOGGER: S&W / VARA		HAMMER: SIMCO AUTOMATIC		ALIGNMENT: CENTERLINE		PAGE 1 OF 5											
PID: 85531 BR ID:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/14/11		ELEVATION: 671.4 (MSL) EOB: 243.7 ft.													
START: 11/18/10 END: 11/23/10		SAMPLING METHOD: SPT / ST		ENERGY RATIO (%): 73.5		COORD: 666627.240 N, 2191807.030 E													
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				PIEZ.	
									GR	CS	FS	SI	CL	LL	PL	PI	WC		ODOT CLASS (GI)
MEDIUM DENSE, DARK BROWN AND BLACK, COARSE AND FINE SAND SILTY, SLIGHTLY CLAYEY, SLIGHTLY GRAVELLY, OCCASIONAL BRICK DEBRIS, SLAG, AND CINDERS, MOIST Fill		671.4	2.5	5 8	18	100	SS-S-1	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
		664.9	5.0	3 3	9	100	SS-S-2	-	-	-	-	-	-	-	-	-	-	-	-
VERY LOOSE TO LOOSE, BROWN, COARSE AND FINE SAND , SILTY, SLIGHTLY GRAVELLY, MOIST			664.9	7.5	3 3	5	100	SS-S-3	-	-	-	-	-	-	-	-	-	-	-
		10.0		1 2	6	72	SS-S-4	-	-	-	-	-	-	-	-	-	-	-	-
MEDIUM STIFF, BROWN, SILT , CLAYEY, SLIGHTLY FINE SANDY, MOIST		657.4	12.5	1 2	4	100	SS-S-5	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
			15.0	3 2	6	100	SS-S-6	1.50	-	-	-	-	-	-	-	-	-	-	-
MEDIUM DENSE, BROWN, COARSE AND FINE SAND SILTY, MOIST		653.4	17.5	1 2	5	100	SS-S-7	2.50	-	-	-	-	-	-	-	-	-	-	A-4b (V)
			20.0	2 5	12	100	SS-S-8	-	-	-	-	-	-	-	-	-	-	-	-
wet below 33 feet		633.4	25.0	5 9	23	100	SS-S-9	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
			30.0	3 5	13	100	SS-S-10	-	-	-	-	-	-	-	-	-	-	-	-
MEDIUM DENSE, DARK GRAY, SANDY SILT , POCKETS OF SILTY FINE SAND, WET		628.4	37.5	7 8	22	50	SS-S-12	-	-	-	-	-	-	-	-	-	-	-	A-4a (V)
			42.5	5 6	18	72	SS-S-13	4.5+	-	-	-	-	-	-	-	-	-	-	-
VERY STIFF, GRAY, SILTY CLAY , MOIST		626.4	45.0	5 6	18	72	SS-S-13	4.5+	-	-	-	-	-	-	-	-	-	-	A-6b (V)
			47.5	9	26	100	SS-S-14	-	-	-	-	-	-	-	-	-	-	-	-

Figure B-16
Sheet 1 of 5

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:04 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

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				
MEDIUM DENSE, GRAY, SANDY SILT , TRACE TO SLIGHTLY CLAYEY, MOIST <i>(continued)</i>		621.4		12 9																
			52.5																	
			55.0	7 12 16	34	100	SS-S-15	4.5+	-	-	-	-	-	NP	NP	NP	18	A-4a (V)		
		613.4	57.5																	
MEDIUM STIFF TO STIFF, GRAY, SILT AND CLAY , OCCASIONAL BLACK AND RED NODULES; FREQUENT CLAYEY SILT LAMINATIONS, MOIST TO WET			60.0	4 6 8	17	100	SS-S-16	3.0 - 3.5	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
			62.5																	
			65.0			58	ST-S-17	4.5+	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
			67.5																	
			70.0	3 5 6	13	100	SS-S-18	2.5 - 2.75	-	-	-	-	-	-	-	-	-	23	A-6a (V)	
			72.5																	
			75.0	2 3 4	9	100	SS-S-19	1.25 - 1.75	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
			77.5																	
			80.0			92	ST-S-20	3.5 - 3.75	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
		587.9	82.5																	
VERY STIFF, GRAY, SILT , CLAYEY, MOIST		586.4	85.0	7 8 9	21	100	SS-S-21	2.0 - 4.5+	0	0	0	53	47	31	21	10	23	A-4b (V)		
STIFF TO VERY STIFF, GRAY, SILT AND CLAY , MOIST			87.5																	
			90.0	4 5 8	16	100	SS-S-22	1.0 - 2.25	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
			92.5																	
			95.0	5 10 14	29	100	SS-S-23	4.0 - 4.25	-	-	-	-	-	-	-	-	-	19	A-6a (V)	
			97.5																	
			100.0	4 4 4	10	78	SS-S-24	0.75 - 4.25	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
			102.5																	

Figure B-16
Sheet 2 of 5

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:04 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT_GPJ

PID: 85531		BR ID: _____		PROJECT: CLEVELAND CENTRAL VIADUCT				STATION / OFFSET: 166+88, 22.0 RT		START: 11/18/10		END: 11/23/10		PG 3 OF 5		B-053-2-10			
MATERIAL DESCRIPTION AND NOTES	ELEV. 567.9	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			
STIFF TO VERY STIFF, GRAY, SILT AND CLAY , MOIST <i>(continued)</i>	565.9	-	-105.0			0	ST-S-25	-	-	-	-	-	-	-	-	-	-	-	
VERY SOFT TO SOFT, GRAY, SILT , CLAYEY, TRACE GRAVEL, WET	563.9	-	-107.5			92	ST-S-26	1.0- 1.5	0	0	1	61	38	28	18	10	25	A-4b (V)	
VERY SOFT, GRAY, SILT AND CLAY , WET		-	-110.0	WOR WOR WOR		0	100	SS-S-27	0.25	-	-	-	-	-	-	-	34	A-6a (V)	
		-	-112.5																
		-	-115.0			0	ST-S-28	-	-	-	-	-	-	-	-	-	-	-	
		-	-117.5			0	ST-S-29	-	-	-	-	-	-	-	-	-	-	-	
		-	-120.0			63	ST-S-30	-	0	1	0	36	63	36	22	14	29	A-6a (V)	
		-	-122.5																
		-	-125.0	WOR WOR WOR		0	100	SS-S-31	0.25	-	-	-	-	34	21	13	26	A-6a (V)	
		-	-127.5																
STIFF TO VERY STIFF, GRAY, SILTY CLAY , SCATTERED CLAYEY SILT LAMINAE, MOIST	543.9	-	-130.0	2 6 7	16	100	SS-S-32	1.25- 2.0	-	-	-	-	-	-	-	-	-	A-6b (V)	
		-	-132.5																
		-	-135.0	5 10 14	29	100	SS-S-33	2.0- 2.5	-	-	-	-	-	-	-	-	-	A-6b (V)	
		-	-137.5																
		-	-140.0	6 11 13	29	56	SS-S-34	2.75- 3.0	-	-	-	-	-	-	-	-	-	A-6b (V)	
		-	-142.5																
		-	-145.0	6 9 13	27	56	SS-S-35	2.0- 4.0	-	-	-	-	-	36	20	16	23	A-6b (V)	
		-	-147.5																
		-	-150.0	5 9 12	26	100	SS-S-36	2.0- 2.25	-	-	-	-	-	-	-	-	-	A-6b (V)	
		-	-152.5																
occasional black nodules to 140 feet		-	-155.0			100	ST-S-37	1.0- 1.5	-	-	-	-	-	-	-	-	-	A-6b (V)	

Figure B-16
Sheet 3 of 5

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:04 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT_GPJ

PID: 85531		BR ID: _____		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 166+88, 22.0 RT		START: 11/18/10		END: 11/23/10		PG 4 OF 5		B-053-2-10						
MATERIAL DESCRIPTION AND NOTES			ELEV. 514.3	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			
STIFF TO VERY STIFF, GRAY, SILTY CLAY , SCATTERED CLAYEY SILT LAMINAE, MOIST (continued) black nodules at 158.5 feet			508.4	157.5	2	13	100	SS-S-38	1.0- 1.5	-	-	-	-	-	-	-	-	29	A-6b (V)	
				160.0	4															7
MEDIUM STIFF TO STIFF, GRAY, SILTY CLAY , SLIGHTLY SANDY, TRACE GRAVEL, OCCASIONAL RED STREAKS, MOIST TO WET			508.4	162.5	2	7	100	SS-S-39	1.0- 1.5	-	-	-	-	-	38	20	18	28	A-6b (V)	
				165.0	3															3
grades to very stiff at 173.5 feet			508.4	167.5	2	18	100	SS-S-40	1.0- 1.5	-	-	-	-	-	-	-	-	-	A-6b (V)	
				170.0	5															10
grades to very stiff at 173.5 feet			508.4	172.5	2	24	100	SS-S-41	1.50	-	-	-	-	-	-	-	-	-	A-6b (V)	
				175.0	4															8
VERY STIFF, GRAY, SILT AND CLAY , TRACE TO SLIGHTLY SANDY, TRACE FINE GRAVEL, MOIST			492.9	177.5	4	27	100	SS-S-42	1.5- 1.75	1	3	4	32	60	33	21	12	21	A-6a (9)	
				180.0	10															12
STIFF TO VERY STIFF, GRAY, SILTY CLAY , SLIGHTLY SANDY, TRACE GRAVEL, MOIST			491.4	182.5	3	26	100	SS-S-43	1.5- 1.75	-	-	-	-	-	-	-	-	-	A-6b (V)	
				185.0	9															12
wet below 193.5 feet			491.4	187.5	7	34	100	SS-S-44	1.75- 2.75	-	-	-	-	-	37	21	16	21	A-6b (V)	
				190.0	12															16
grades to medium stiff at 199.5 feet			491.4	192.5	3	15	100	SS-S-45	1.5- 2.5	-	-	-	-	-	-	-	-	26	A-6b (V)	
				195.0	5															7
wet below 193.5 feet			491.4	197.5	5	6	100	SS-S-46	1.5- 3.5	-	-	-	-	-	38	21	17	30	A-6b (V)	
				200.0	2															3
HARD, GRAY, SILT AND CLAY , SLIGHTLY SANDY TO SANDY, TRACE TO SLIGHTLY GRAVELLY, MOIST			469.4	202.5	14	76	100	SS-S-47	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
				205.0	27															35
wet, clayey sand layer at 209.7 feet			469.4	207.5	12	69	100	SS-S-48	-	-	-	-	-	-	-	-	-	-	A-6a (V)	
				210.0	22															

Figure B-16
Sheet 4 of 5

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:04 - D:\WIP\21-121-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID:		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 166+88, 22.0 RT		START: 11/18/10		END: 11/23/10		PG 5 OF 5		B-053-2-10					
MATERIAL DESCRIPTION AND NOTES			ELEV.	DEPTH	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			ODOT CLASS (GI)	PIEZ.
										GR	CS	FS	SI	CL	LL	PL	PI		
HARD, GRAY, SILT AND CLAY SLIGHTLY SANDY TO SANDY, TRACE TO SLIGHTLY GRAVELLY, MOIST <i>(continued)</i>			460.8		34														
				212.5	19	76	100	SS-S-49	-	-	-	-	-	-	-	-	-	-	A-6a (V)
HARD, GRAY, SILT, CLAYEY, SLIGHTLY SANDY, TRACE GRAVEL, MOIST			452.9		25														
			451.4	215.0	9	44	100	SS-S-50	2.5-3.0	-	-	-	-	-	29	19	10	16	A-4b (V)
HARD, GRAY, SILT AND CLAY SLIGHTLY SANDY TO SANDY, TRACE TO SLIGHTLY GRAVELLY, MOIST cobble at 227 feet to 228 feet - inferred from drill action			443.4		14														
				220.0	12	58	100	SS-S-51	4.0-4.5	-	-	-	-	-	-	-	-	-	A-6a (V)
DENSE TO VERY DENSE, GRAY, SANDY SILT, SLIGHTLY CLAYEY, TRACE GRAVEL TO GRAVELLY, MOIST cobble at 230.5 feet - inferred from drill action			436.4		19														
				222.5	15	48	56	SS-S-52	-	-	-	-	-	-	-	-	-	-	A-4a (V)
SHALE, DARK GRAY, HIGHLY TO SLIGHTLY WEATHERED, WEAK TO SLIGHTLY STRONG, FISSILE.			436.4	TR	20														
				225.0	16	85	100	SS-S-53	-	24	12	17	-	47	-	-	-	15	A-4a (V)
			427.7		43														
				235.0	50/3"	-	100	SS-S-54	-	-	-	-	-	-	-	-	-	-	Rock (V)
				EOB	2														
					2													Rock (V)	

NOTES: GEOKON 4500S SER#1033723 VWP INSTALLED TIP UP IN GROUT; FILTER PACK SYMBOL USED TO DEPICT INSTRUMENT LOCATION
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: USED 150 LB. BENTONITE POWDER; USED 6 BAG CEMENT

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:04 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PROJECT: CLEVELAND CENTRAL VIADUCT		DRILLING FIRM / OPERATOR: PRO GEOTECH / FAY		DRILL RIG: MOBILE B-57		STATION / OFFSET: 177+10, 38.0 LT		EXPLORATION ID: B-066-0-10													
TYPE: BRIDGE REPLACEMENT		SAMPLING FIRM / LOGGER: S&W / TABOR		HAMMER: MOBILE AUTOMATIC		ALIGNMENT: CENTERLINE		PAGE 1 OF 3													
PID: 85531 BR ID:		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/14/11		ELEVATION: 673.4 (MSL) EOB: 130.0 ft.															
START: 12/3/10 END: 6/21/10		SAMPLING METHOD: SPT / ST		ENERGY RATIO (%): 81.3		COORD: 667180.510 N, 2192650.210 E															
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTH	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			ODOT CLASS (GI)	PIEZ.			
									GR	CS	FS	SI	CL	LL	PL	PI			WC		
LOOSE, BROWN, COARSE AND FINE SAND SILTY, TRACE ORGANICS, DAMP MEDIUM DENSE TO DENSE, BROWN, COARSE AND FINE SAND , SILTY, TRACE TO SLIGHTLY GRAVELLY, DAMP Fill		673.4																			
		672.9		2	12	72	SS-S-1	0-0.75	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			2.5	8	41	100	SS-S-2	3.25-4.5	-	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
			5.0	7	28	100	SS-S-3	-	-	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
VERY LOOSE TO LOOSE, BROWN, COARSE AND FINE SAND , SILTY, TRACE GRAVEL, OCCASIONAL BRICK AND CONCRETE FRAGMENTS, DRY Fill		663.4																			
			7.5	4	19	94	SS-S-4	-	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			10.0	2	7	67	SS-S-5	-	-	-	-	-	-	-	-	-	-	-	-	-	
			12.5	3	3	94	SS-S-6	-	-	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
			15.0	2	5	100	SS-S-7	-	-	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
			17.5	2	4	89	SS-S-8	-	-	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
			20.0	2	7	89	SS-S-9	-	-	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
			22.5	3	23	83	SS-S-10	-	0	2	77	-	21	-	-	-	-	-	24	-	A-3a (V)
MEDIUM DENSE, YELLOW - BROWN, COARSE AND FINE SAND , SLIGHTLY SILTY TO SILTY, TRACE CLAY, WET		650.4	W																		
			25.0	3	18	72	SS-S-11	-	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			30.0	5	30	94	SS-S-12	-	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)	
			35.0	4	18	89	SS-S-13	2.25-3.0	-	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)
STIFF TO VERY STIFF, GRAY, SILT , TRACE TO SLIGHTLY CLAYEY, MOIST		629.4																			
			45.0	3	16	89	SS-S-14	4.50	-	-	-	-	-	-	27	20	7	20	-	A-4b (V)	

Figure B-17
Sheet 1 of 3

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:04 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID:		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 177+10, 38.0 LT		START: 12/3/10		END: 6/21/10		PG 2 OF 3		B-066-0-10											
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							
STIFF TO VERY STIFF, GRAY, SILT, TRACE TO SLIGHTLY CLAYEY, MOIST (continued)				623.4	52.5	5																			
					55.0			100	ST-S-15	4.50	-	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)		
					60.0	8 12 14	35	100	SS-S-16	4.0-4.5	-	-	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
LOOSE TO MEDIUM DENSE, GRAY WITH BROWN MOTTLE, SILT, MOIST				612.4	62.5																				
					65.0	3 6 7	18	100	SS-S-17	3.50	-	-	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
					70.0			100	ST-S-18	4.50	-	-	-	-	NP	NP	NP	22					A-4b (V)		
					75.0	2 3 3	8	133	SS-S-19	0.75-1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
					77.5																				
STIFF TO VERY STIFF, GRAY WITH BLACK MOTTLE, SILTY CLAY, MOIST				596.4	80.0	3 5 7	16	100	SS-S-20	3.25-4.25	-	-	-	-	-	-	-	-	-	-	-	A-6b (V)			
					85.0	5 9 12	28	100	SS-S-21	3.5-4.5	-	-	-	-	-	-	-	-	-	-	-	-	19	A-6b (V)	
					90.0	4 8 10	24	89	SS-S-22	3.0-3.5	-	-	-	-	-	-	-	-	-	-	-	-	-	A-6b (V)	
					95.0	5 8 12	27	100	SS-S-23	4.0-4.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A-6b (V)
					100.0	7 11 17	38	94	SS-S-24	4.50	-	-	-	-	-	-	-	-	-	-	-	-	-	20	A-6b (V)
					102.5																				

Figure B-17
Sheet 2 of 3

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:04 - D:\WIP\21-121-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID:		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 177+10, 38.0 LT		START: 12/3/10		END: 6/21/10		PG 3 OF 3		B-066-0-10									
MATERIAL DESCRIPTION AND NOTES			ELEV.	DEPTH	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	PIEZ.			
										GR	CS	FS	SI	CL	LL	PL	PI						
STIFF TO VERY STIFF, GRAY WITH BLACK MOTTLE, SILTY CLAY, MOIST (continued)			569.9																				
			566.4		105.0	7	24	100	SS-S-25	2.0-3.5	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
MEDIUM STIFF TO STIFF, GRAY, SILT, TRACE TO SLIGHTLY CLAYEY, WET TO MOIST			543.4																				
				107.5																			
				110.0			96		ST-S-26	1.5-1.75	-	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)
				112.5																			
				115.0			12	133	SS-S-27	0.5-0.75	-	-	-	-	-	-	-	-	-	-	-	29	A-4b (V)
				117.5																			
			543.4																				
				120.0			117		ST-S-28	2.5-3.0	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
				122.5																			
				125.0			16	133	SS-S-29	1.0-1.5	-	-	-	-	-	-	-	-	-	-	-	-	A-4b (V)
			543.4																				
				127.5			19	133	SS-S-30	1.0-1.5	-	-	-	-	-	-	30	22	8	23	A-4b (V)		
				EOB	130.0																		

NOTES: GEOKON 4500S SER#1030838 VWP INSTALLED TIP UP IN GROUT; FILTER PACK SYMBOL USED TO DEPICT INSTRUMENT LOCATION
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: NOT RECORDED

Figure B-17
 Sheet 3 of 3

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:05 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PROJECT: CLEVELAND CENTRAL VIADUCT	DRILLING FIRM / OPERATOR: OHIO TEST BOR / HEPNER	DRILL RIG: SIMCO 2800 HSHT	STATION / OFFSET: 523+38, 118.0 RT	EXPLORATION ID: B-069-3-10
TYPE: BRIDGE REPLACEMENT	SAMPLING FIRM / LOGGER: S&W / VARA	HAMMER: SIMCO AUTOMATIC	ALIGNMENT: CENTERLINE	
PID: 85531 BR ID:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 1/14/11	ELEVATION: 674.4 (MSL) EOB: 125.0 ft.	PAGE 1 OF 3
START: 11/9/10 END: 11/10/10	SAMPLING METHOD: SPT / ST	ENERGY RATIO (%): 73.5	COORD: 667476.060 N, 2193718.040 E	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG				INST.	
								GR	CS	FS	SI	CL	LL	PL	PI	WC		ODOT CLASS (GI)
STIFF, DARK BROWN TO BLACK, SILTY CLAY , SANDY, SCATTERED BRICK DEBRIS AND PLANT MATERIAL, MOIST Fill	671.4	2.5	2 4	11	100	SS-S-1	-	-	-	-	-	-	-	-	-	-	-	A-6b (V)
LOOSE TO MEDIUM DENSE, TAN, COARSE AND FINE SAND , TRACE TO SLIGHTLY GRAVELLY FINE SAND, SLIGHTLY SILTY, MOIST	664.7	5.0	9 10	24	67	SS-S-2	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
grades to silty below 8.5 feet	664.7	7.5	3 3	9	100	SS-S-3	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
LOOSE, TAN, SILT , FINE SANDY, WET	662.4	10.0	3 2	6	78	SS-S-4	-	-	-	-	-	-	-	-	-	-	-	
LOOSE, TAN, COARSE AND FINE SAND , SILTY, MOIST	660.2	12.5	2 1	4	100	SS-S-5	-	-	-	-	-	-	-	-	-	-	-	A-4a (V)
grades to gravelly, slightly silty	660.2	15.0	1 2	7	83	SS-S-6	-	-	-	-	-	-	-	-	-	-	-	
MEDIUM DENSE TO DENSE, TAN TO TAN-GRAY, COARSE AND FINE SAND , SLIGHTLY SILTY TO SILTY, SLIGHTLY FINE GRAVELLY, MOIST		17.5	4 6	17	100	SS-S-7	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
		20.0	7 8	21	89	SS-S-8	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
wet below 24 feet		22.5																
		25.0	3 4	13	89	SS-S-9	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
		27.5																
		30.0	8 12 19	38	83	SS-S-10	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
		32.5																
		35.0	10 14 14	34	83	SS-S-11	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
		37.5																
		40.0	5 13 15	34	83	SS-S-12	-	2	1	82	-	15	-	-	-	-	22	A-3a (V)
		42.5																
		45.0	5 13 16	36	100	SS-S-13	-	-	-	-	-	-	-	-	-	-	-	A-3a (V)
VERY STIFF, GRAY, SILT , SLIGHTLY CLAYEY, SLIGHTLY SANDY, FREQUENT SILTY FINE SAND LAMINATIONS, MOIST	628.4	47.5																
	624.4		8	23	100	SS-S-14	4.00	-	-	-	-	-	-	26	19	7	19	A-4b (V)

Figure B-18
Sheet 1 of 3

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:05 - D:\WIP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

PID: 85531		BR ID:		PROJECT: CLEVELAND CENTRAL VIADUCT		STATION / OFFSET: 523+38, 118.0 RT		START: 11/9/10		END: 11/10/10		PG 2 OF 3		B-069-3-10						
MATERIAL DESCRIPTION AND NOTES			ELEV. 624.4	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.
										GR	CS	FS	SI	CL	LL	PL	PI			
STIFF, GRAY, SILTY CLAY, MOIST			618.4	52.5	9 10															
				55.0			75	ST-S-15	1.50	-	-	-	-	-	-	-	-	-	-	A-6b (V)
STIFF TO VERY STIFF, GRAY, SILT, CLAYEY, SLIGHTLY FINE SANDY TO SANDY, MOIST			609.4	57.5																
				60.0	4 5	12	56	SS-S-16	4.5+	-	-	-	-	-	-	-	-	-	-	A-4b (V)
VERY STIFF, GRAY, SILT AND CLAY, TRACE FINE SAND, MOIST			591.4	62.5																
				65.0	6 13 15	34	100	SS-S-17	4.25	-	-	-	-	-	-	-	-	-	18	A-4b (V)
VERY STIFF, GRAY, SILT, SLIGHTLY CLAYEY, MOIST			589.4	67.5																
				70.0	6 7 11	22	100	SS-S-18	2.75 - 4.25	-	-	-	-	-	-	-	-	-	-	A-6a (V)
STIFF, GRAY, SILTY CLAY, OCCASIONAL CLAYEY SILT LAYERS, MOIST			571.4	72.5																
				75.0	4 6 11	21	100	SS-S-19	4.5+	-	-	-	-	-	-	-	-	-	-	A-6a (V)
STIFF, GRAY, SILTY CLAY, OCCASIONAL CLAYEY SILT LAYERS, MOIST			571.4	77.5																
				80.0			50	ST-S-20	4.5+	-	-	-	-	-	-	-	-	-	-	A-6a (V)
STIFF, GRAY, SILTY CLAY, OCCASIONAL CLAYEY SILT LAYERS, MOIST			571.4	82.5																
				85.0	6 10 14	29	100	SS-S-21	-	-	-	-	-	28	21	7	18		A-4b (V)	
STIFF, GRAY, SILTY CLAY, OCCASIONAL CLAYEY SILT LAYERS, MOIST			571.4	87.5																
				90.0	4 7 8	18	72	SS-S-22	2.5 - 4.5	-	-	-	-	-	-	-	-	-	-	A-6b (V)
STIFF, GRAY, SILTY CLAY, OCCASIONAL CLAYEY SILT LAYERS, MOIST			571.4	92.5																
				95.0	4 4 7	13	78	SS-S-23	1.75 - 2.5	-	-	-	-	-	-	-	-	-	25	A-6b (V)
STIFF, GRAY, SILTY CLAY, OCCASIONAL CLAYEY SILT LAYERS, MOIST			571.4	97.5																
				100.0	3 5 7	15	100	SS-S-24	1.75 - 2.5	-	-	-	-	-	-	-	-	-	-	A-6b (V)
STIFF, GRAY, SILTY CLAY, OCCASIONAL CLAYEY SILT LAYERS, MOIST			571.4	102.5																

Figure B-18
Sheet 2 of 3

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 2/12/13 07:05 - D:\WP\21-1\21-1-21361 CLEVELAND CENTRAL VIADUCT\FINAL_GINT PROJECT\21-21361_CURRENT.GPJ

MATERIAL DESCRIPTION AND NOTES	ELEV. 570.8	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	INST.
								GR	CS	FS	SI	CL	LL	PL	PI			
SOFT TO MEDIUM STIFF, GRAY, SILTY CLAY, MOIST TO WET (continued)		-105.0			0	ST-S-25	-	-	-	-	-	-	-	-	-	-	A-6b (V)	
		-107.5			88	ST-S-26	0.75	-	-	-	-	-	-	-	-	-	A-6b (V)	
		-110.0	1 2	5	100	SS-S-27	0.50	-	-	-	-	-	39	21	18	31	A-6b (V)	
		-112.5																
		-115.0	1 3	5	100	SS-S-28	0.50	-	-	-	-	-	-	-	-	-	A-6b (V)	
STIFF TO VERY STIFF, GRAY, SILT, SLIGHTLY FINE SANDY, SLIGHTLY CLAYEY, MOIST		-117.5																
	555.4	-120.0	2 5 6	13	100	SS-S-29	1.0- 1.5	-	-	-	-	-	-	-	-	-	A-4b (V)	
	549.4	-122.5																
		-125.0	7 11 15	32	100	SS-S-30	2.0- 3.0	-	-	-	-	-	30	22	8	22	A-4b (V)	
		EOB																

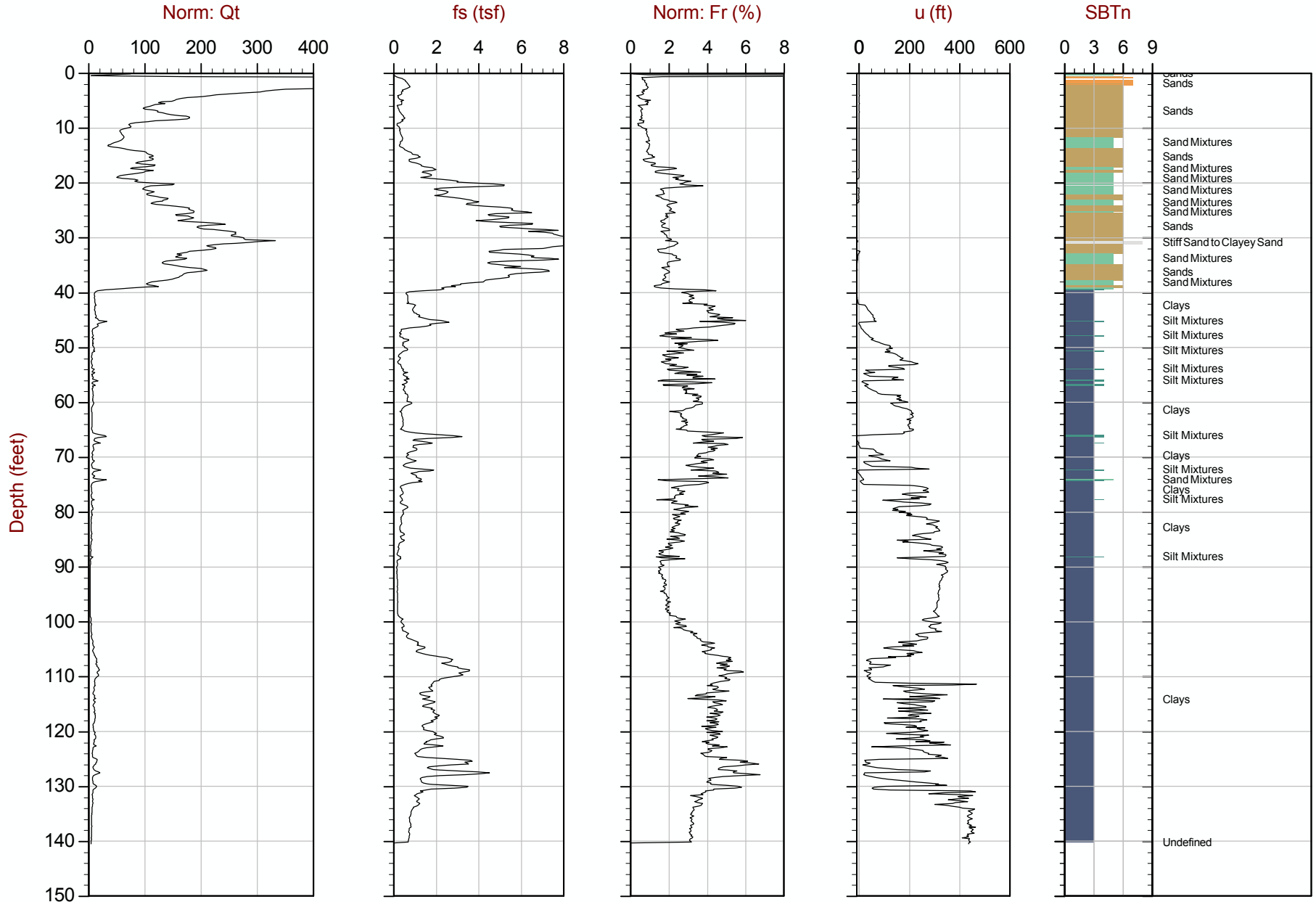
NOTES: NONE
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: USED 50 LB. BENTONITE POWDER; USED 1 BAG CEMENT



Shannon & Wilson

Job No: 10-782
Date: 11:18:10 09:40
Site: I-90

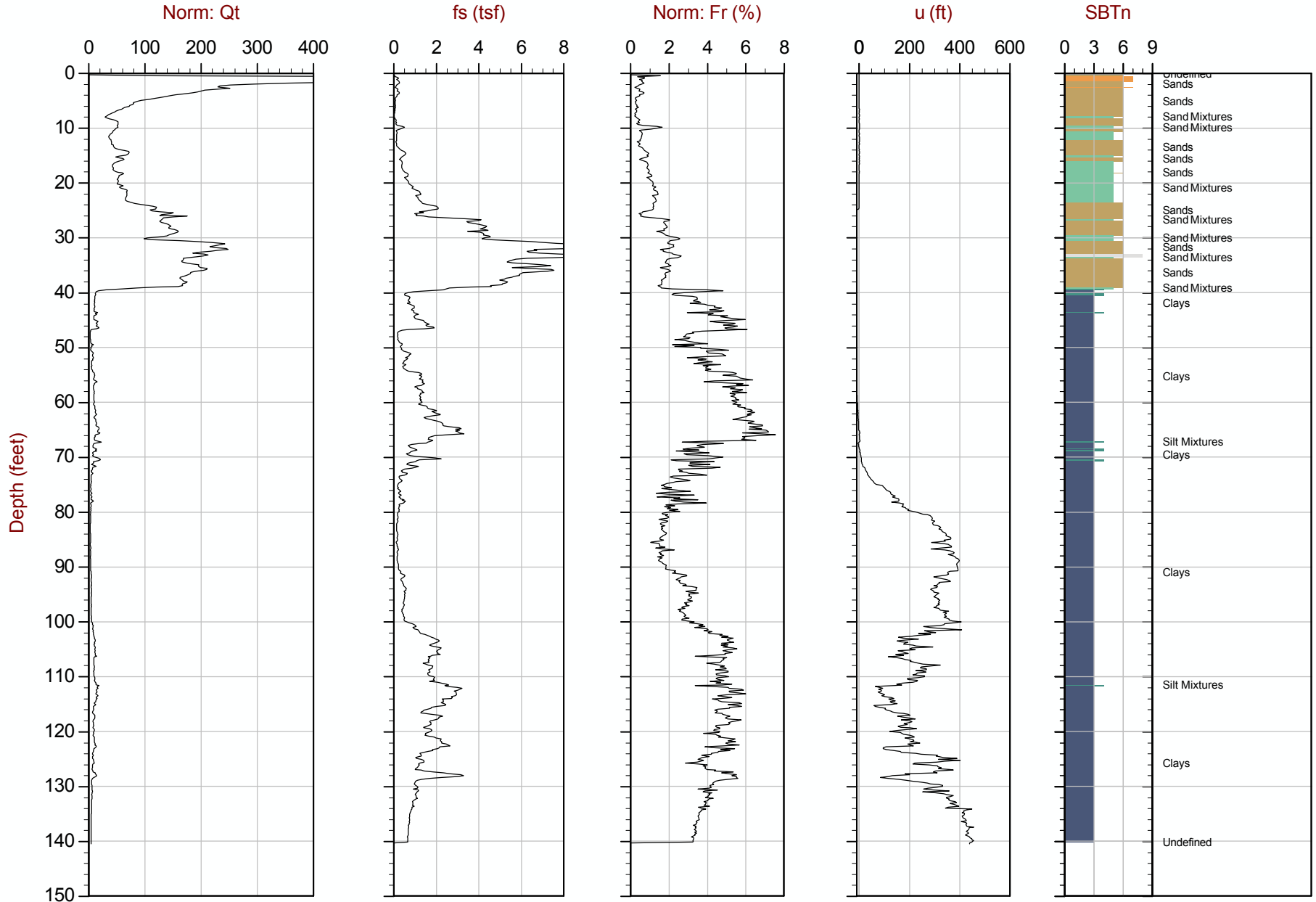
Sounding: C-012-3-10
Cone: 243:T1500F15U500



Max Depth: 42.850 m / 140.58 ft File: 782C012-3-10.COR
Depth Inc: 0.050 m / 0.164 ft

SBT: Lunne, Robertson and Powell, 1997
Coords: N: 4591972.865 E: 442113.962

Figure C-1



Max Depth: 42.850 m / 140.58 ft File: 782C012-4-10.COR
 Depth Inc: 0.050 m / 0.164 ft

SBT: Lunne, Robertson and Powell, 1997
 Coords: N: 4592006.394 E: 442086.398

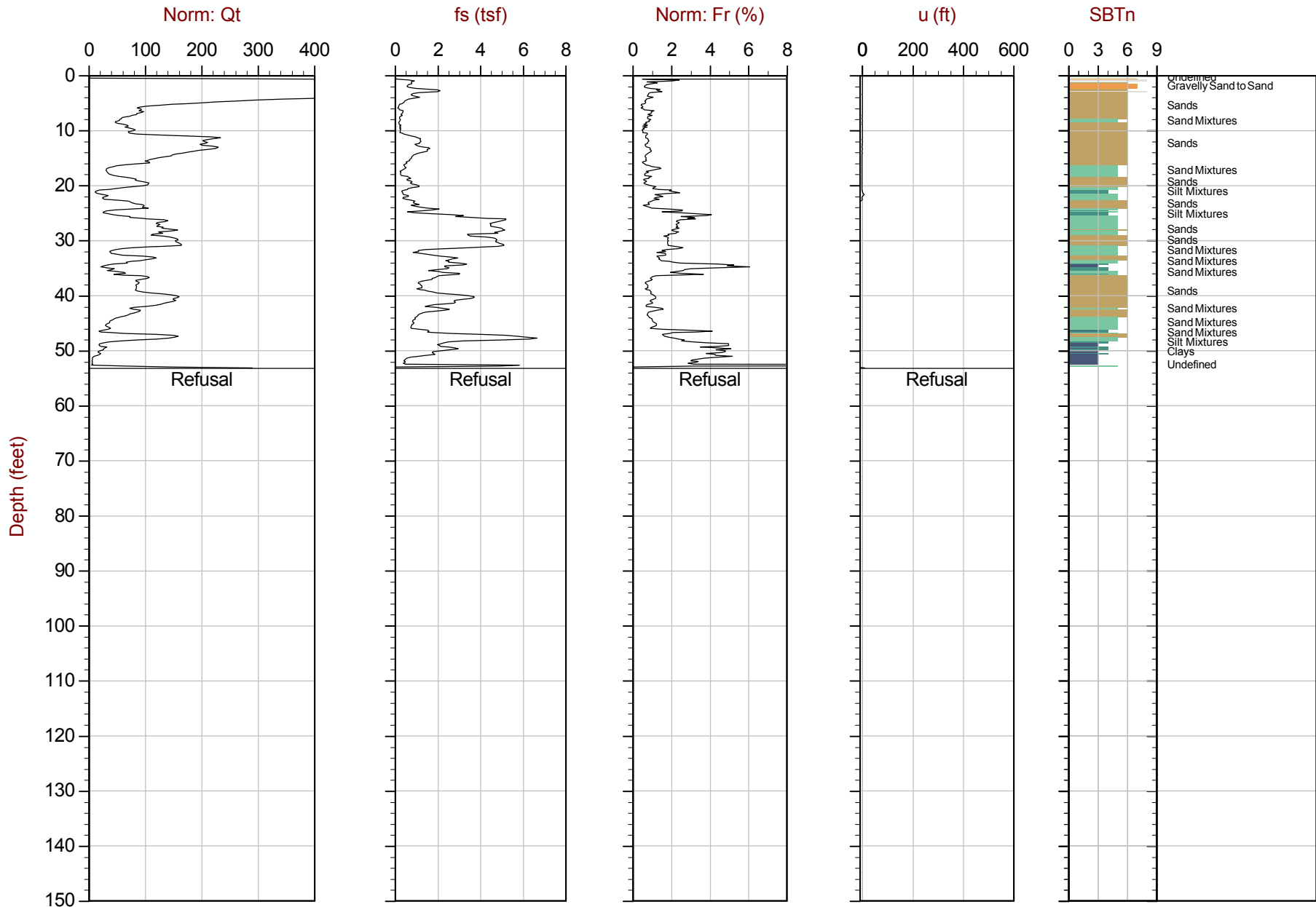
Figure C-2



Shannon & Wilson

Job No: 10-782
Date: 11:18:10 07:27
Site: I-90

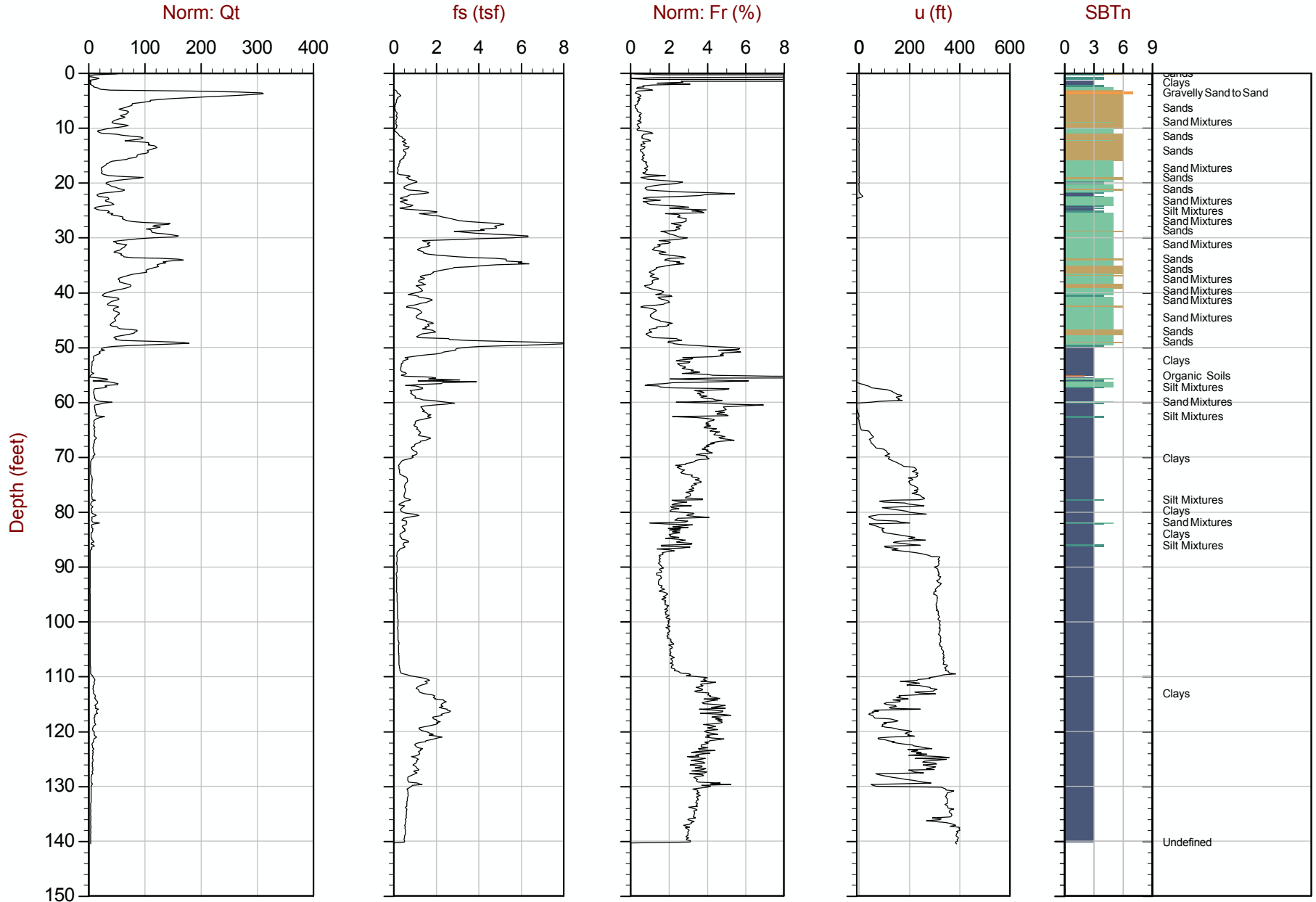
Sounding: C-015-1-10
Cone: 243:T1500F15U500



Max Depth: 16.200 m / 53.15 ft
Depth Inc: 0.050 m / 0.164 ft
File: 782C015-1-10.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: N: 4592239.558 E: 442085.485

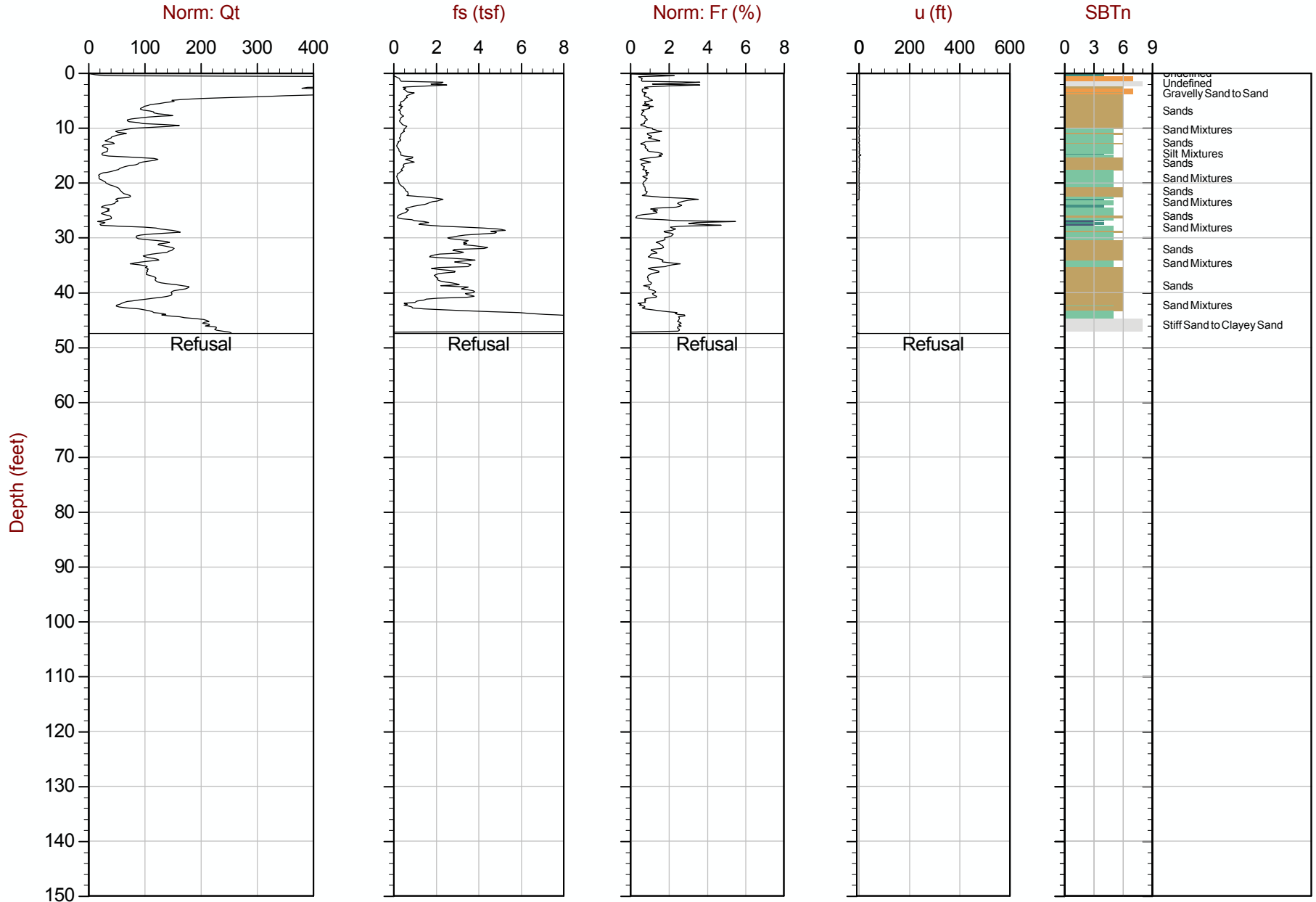
Figure C-3



Max Depth: 42.850 m / 140.58 ft File: 782C015-1-10A.COR
 Depth Inc: 0.050 m / 0.164 ft

SBT: Lunne, Robertson and Powell, 1997
 Coords: N: 4592230.083 E: 442113.241

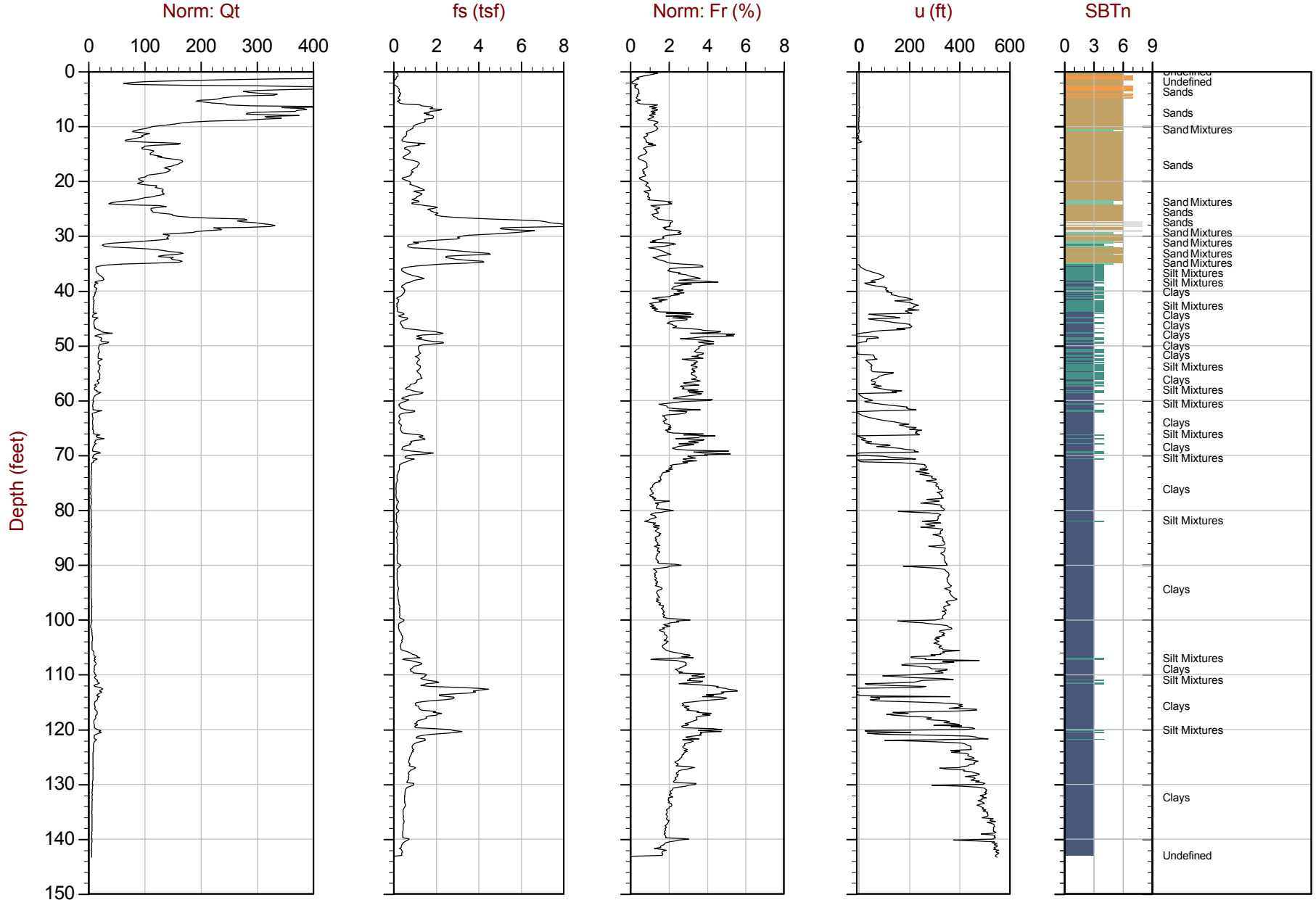
Figure C-4



Max Depth: 14.450 m / 47.41 ft
 Depth Inc: 0.050 m / 0.164 ft
 File: 782C015-2-10.COR

SBT: Lunne, Robertson and Powell, 1997
 Coords: N: 4592244.785 E: 442125.883

Figure C-5



Max Depth: 43.700 m / 143.37 ft File: 782C022.COR
Depth Inc: 0.050 m / 0.164 ft

SBT: Lunne, Robertson and Powell, 1997
Coords: N: 4592538.575 E: 442179.724

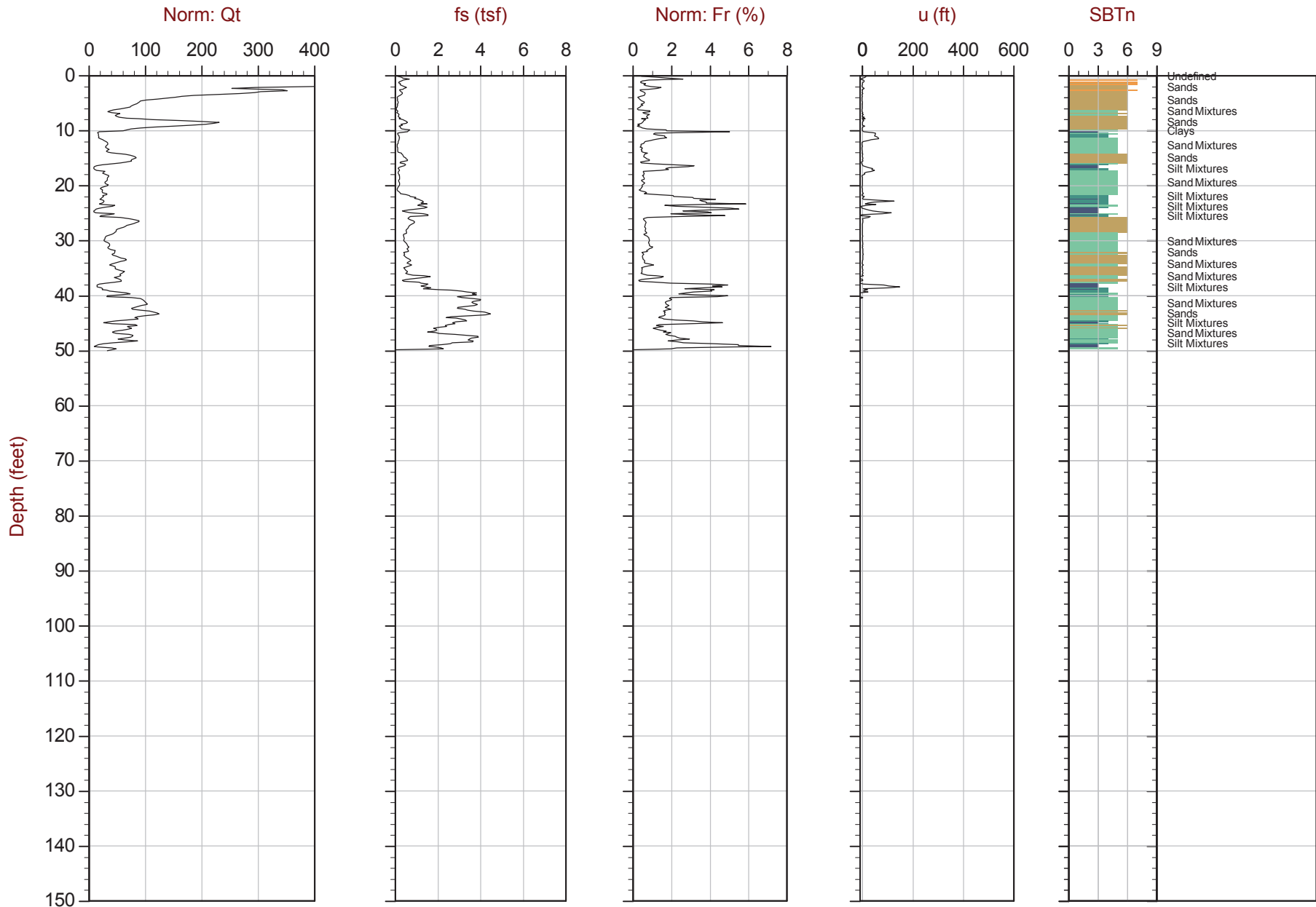
Figure C-6



Shannon & Wilson

Job No: 10-782
Date: 03:29:11 14:48
Site: Cleveland, OH

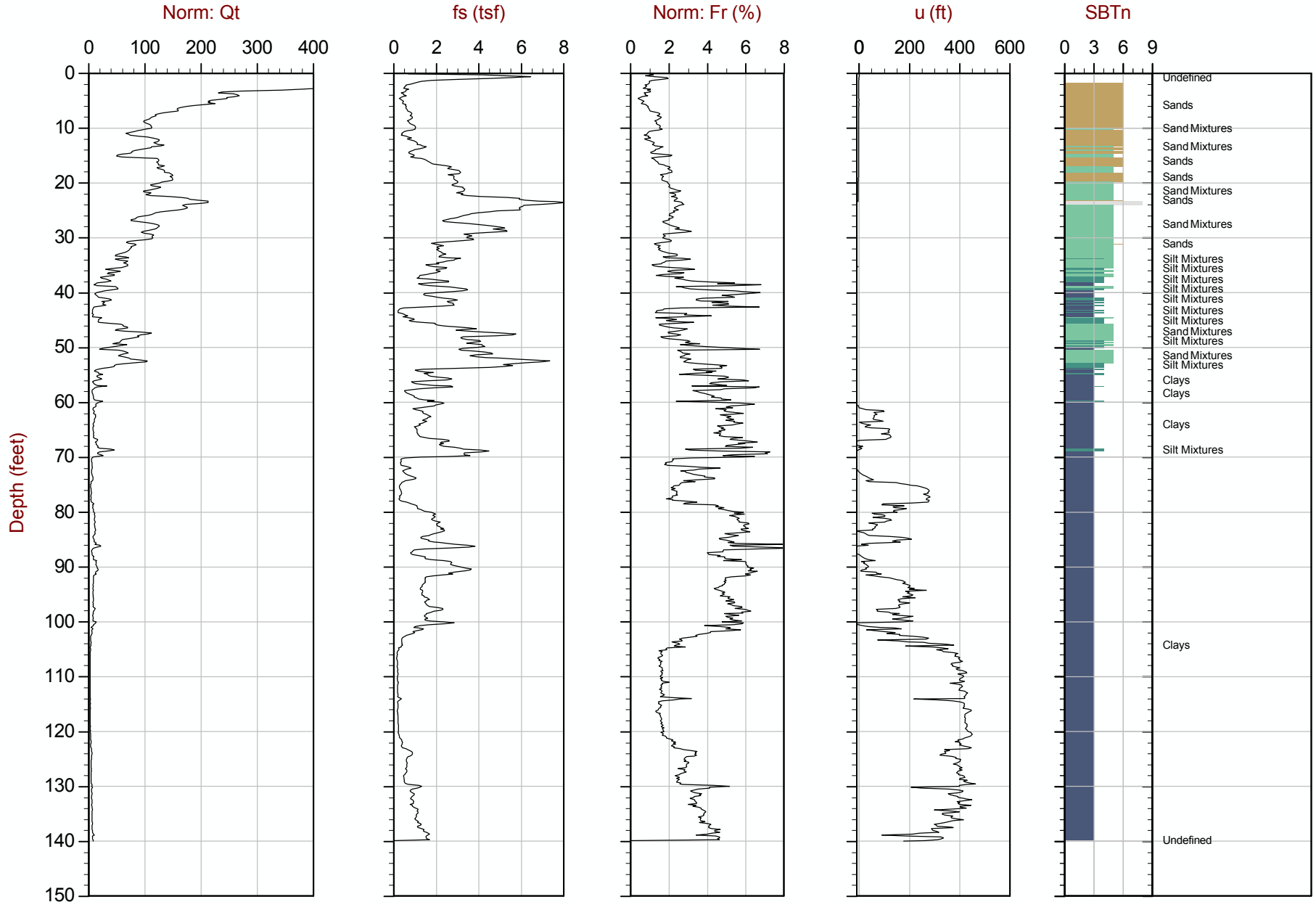
Sounding: C-047-4-11
Cone: 224:T1500F15U500



Max Depth: 15.250 m / 50.03 ft
Depth Inc: 0.050 m / 0.164 ft
File: 722CP03.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: UTM Zone 17 N: 4593672.934 E: 442639.591

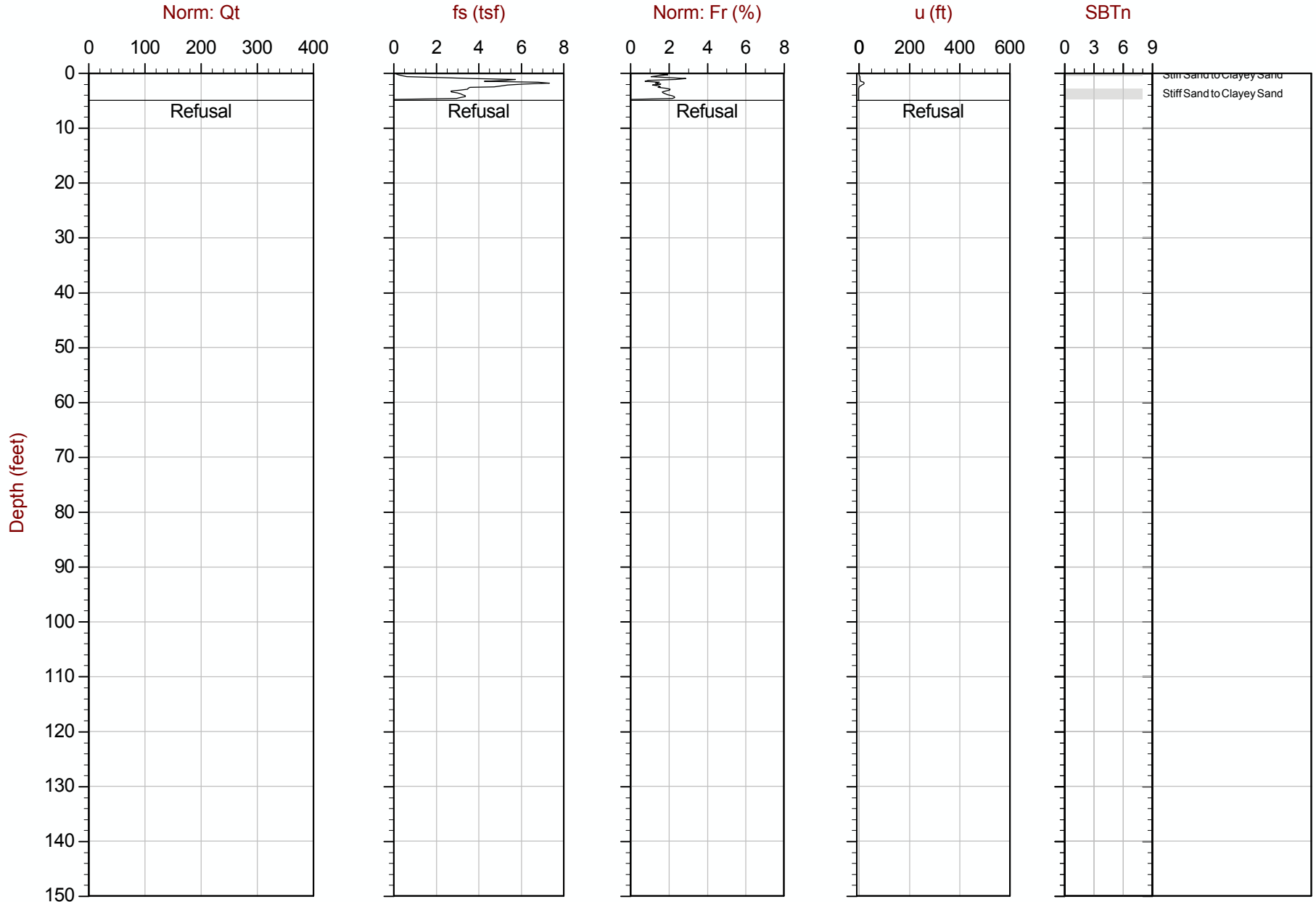
Figure C-7



Max Depth: 42.700 m / 140.09 ft File: 782C051-3-10.COR
 Depth Inc: 0.050 m / 0.164 ft

SBT: Lunne, Robertson and Powell, 1997
 Coords: N: 4593799.546 E: 442774.160

Figure C-7

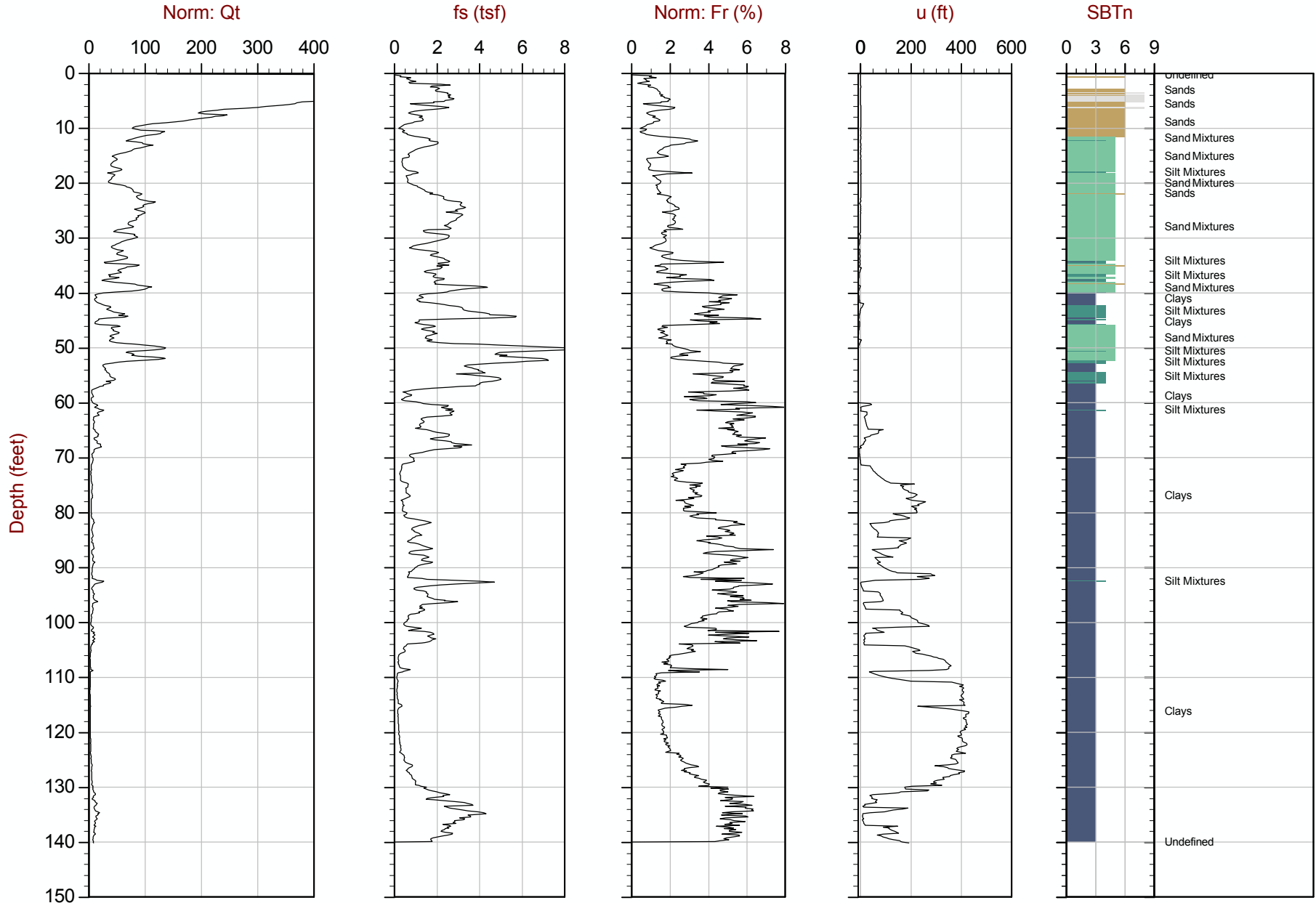


Max Depth: 1.500 m / 4.92 ft
 Depth Inc: 0.050 m / 0.164 ft

File: 782C053-1-10.COR

SBT: Lunne, Robertson and Powell, 1997
 Coords: N: 4593788.202 E: 442804.678

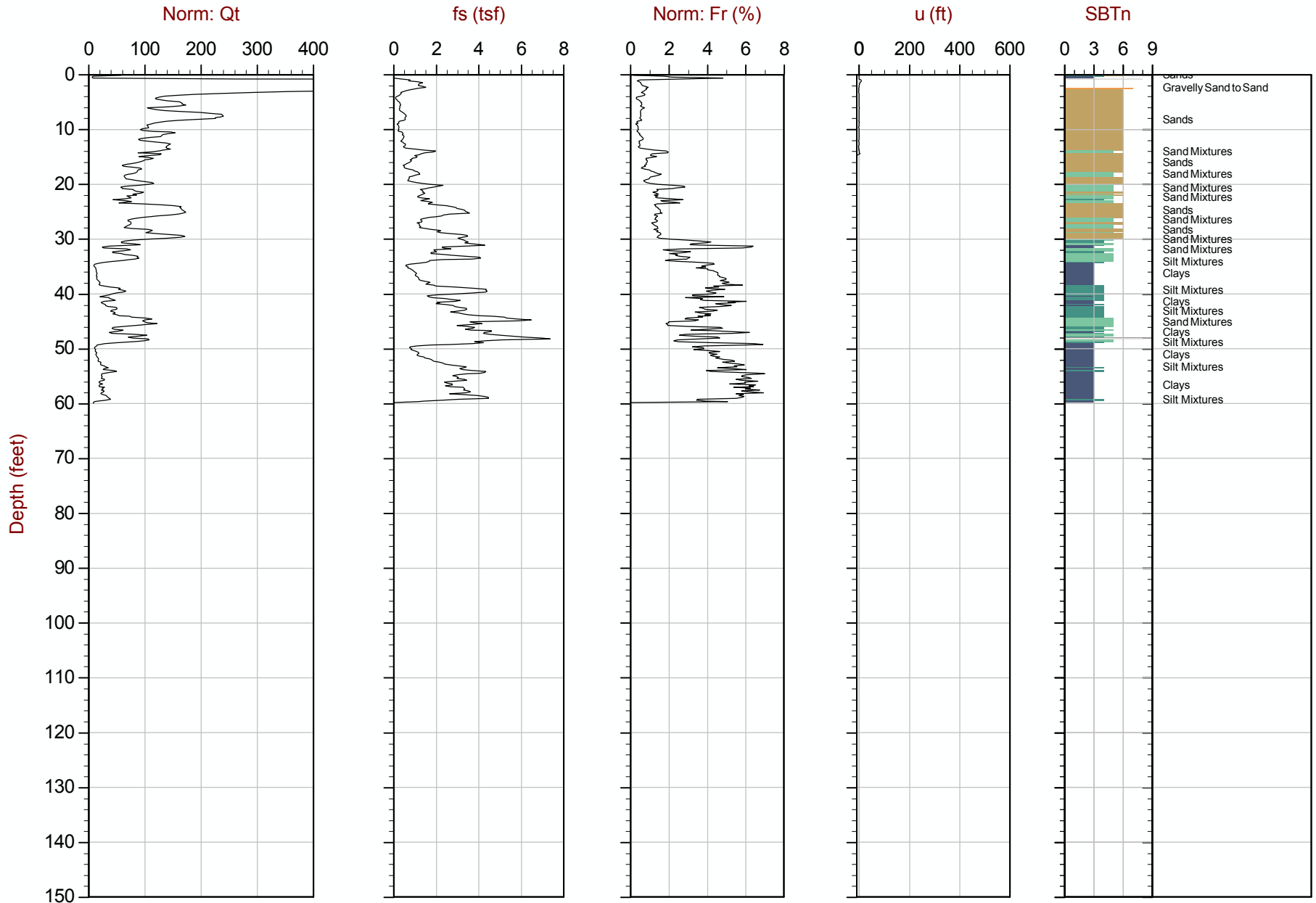
Figure C-8



Max Depth: 42.750 m / 140.25 ft
Depth Inc: 0.050 m / 0.164 ft
File: 782C053-1-10A.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: N: 4593793.775 E: 442801.939

Figure C-9



Max Depth: 18.300 m / 60.04 ft
 Depth Inc: 0.050 m / 0.164 ft
 File: 782C062-1-10.COR

SBT: Lunne, Robertson and Powell, 1997
 Coords: N: 4593905.401 E: 442960.036

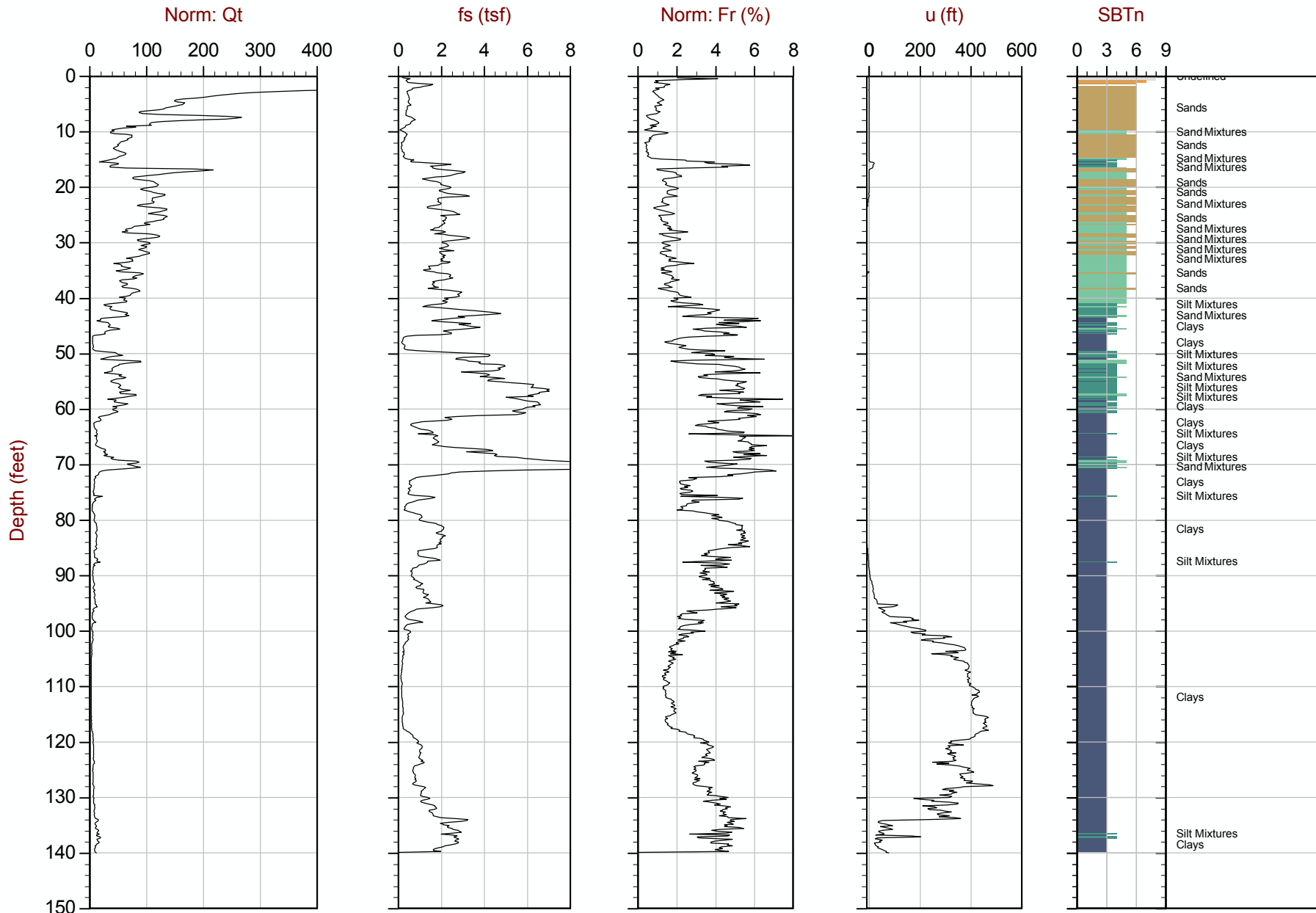
Figure C-10



Shannon & Wilson

Job No: 10-782
Date: 11:18:10 13:52
Site: I-90

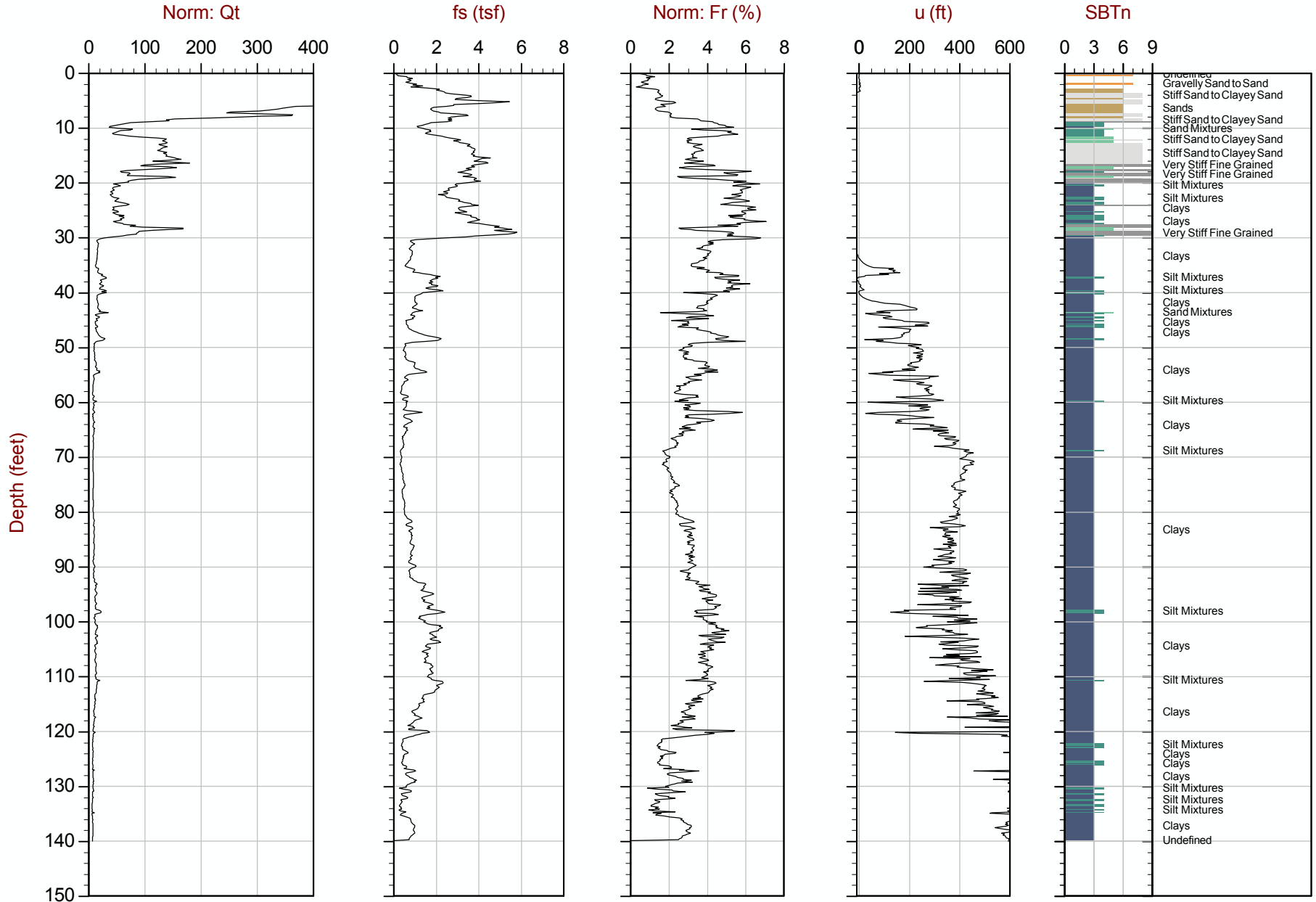
Sounding: C-065-0-10
Cone: 243:T1500F15U500



Max Depth: 42.700 m / 140.09 ft
Depth Inc: 0.050 m / 0.164 ft
File: 782C065-0-10.COR

SBT: Lunne, Robertson and Powell, 1997
Coords: N: 4593936.143 E: 443050.711

Figure C-11



Max Depth: 42.700 m / 140.09 ft
 Depth Inc: 0.050 m / 0.164 ft
 File: 782C074-2-10.COR

SBT: Lunne, Robertson and Powell, 1997
 Coords: N: 4593543.620 E: 443079.614

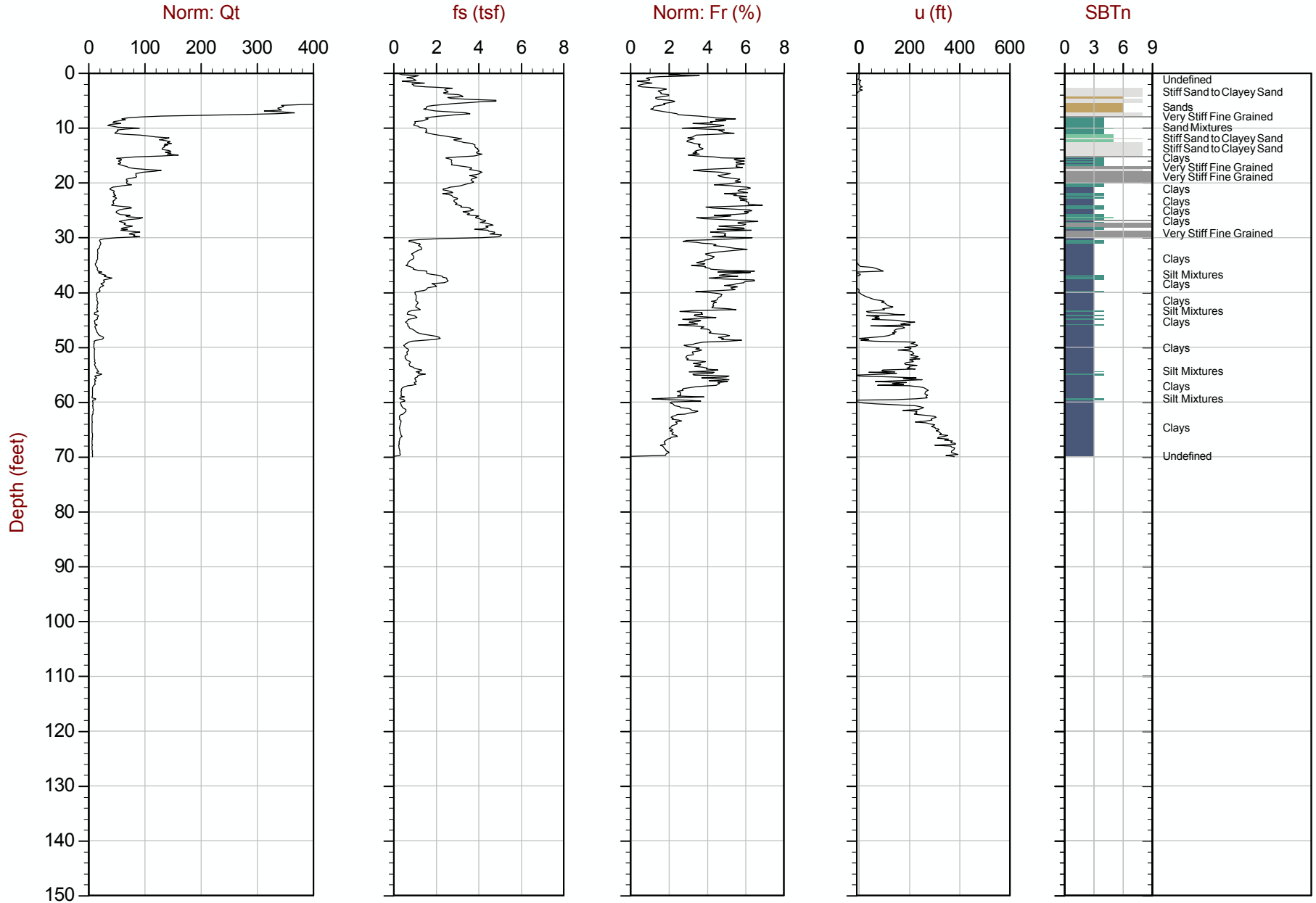
Figure C-12



Shannon & Wilson

Job No: 10-782
 Date: 12:30:10 14:17
 Site: Cleveland, OH

Sounding: C-074-2-10A
 Cone: 243:T1500F15U500



Max Depth: 21.350 m / 70.05 ft
 Depth Inc: 0.050 m / 0.164 ft
 File: 782C074-2-10A.COR

SBT: Lunne, Robertson and Powell, 1997
 Coords: N: 4593543.631 E: 443078.223

Figure C-13