

LOG OF SOIL PROFILE			FIELD DATA				LABORATORY DATA					▼ SPT N VALUE ▼				
ELEVATION ft	Depth	DEPTH (ft)	SAMPLE NO.	NO. OF BLOWS FOR 6-inch DRIVE	N VALUE	SAMPLE TIP DEPTH (ft)	UNCONFINED COMP STRENGTH (psf)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT	PLASTICITY INDEX	% PASSING #200	10	20	30	40
649.0	0.1	0														
Ground Surface Elevation 649.10 ft 2 inches of ASPHALTIC CEMENT CONCRETE																
646.6	2.5		SS1	6-8-7	15	2.5										
FILL - Medium dense gravel, trace to some sand, trace concrete and brick pieces, gray and brown, moist (GP)																
641.1	8.0		SS2	3-6-6	12	5.0										
(FILL) FILL - Mixed concrete and brick pieces and gravel, trace sand, gray and brown, moist to wet (Strong foreign odor)																
637.6	11.5		SS4	1-1-1	2	10.0		17.7								
Very loose COARSE SAND, trace gravel, brown, wet (SP)  (Possible Fill)																
634.9	14.2		SS5	42-50/2"	50 +	14.2										
Very soft SHALE, gray  (Shale)																
(Boring continued as rock core)																

**BORING COORDINATES**

E(x) Coordinate 221312.9  
N(y) Coordinate 677566.4

**GROUNDWATER READINGS**

First Encountered: 6 feet  
Upon Completion: N/A

Remarks:

Drilling Company: Ohio TestBor, Inc.  
Drill Rig: Simco 2800 Truck Mounted Drill Rig  
Engineer on Rig: P. Rameshbabu  
Drilling Method: 3 1/4 inch HSA  
Hammer Type: Automatic  
Backfilled With: Bentonite-Grout  
Date Started: 08-07-13  
Date Completed: 08-08-13  
Checked By: JSS  
# Torvane  
\* Pocket Penetrometer  
<> Disturbed Sample



**Somat Engineering**

**NEORS D Advanced Facilities Plan - Doan Valley  
Tunnel  
Cleveland, Ohio**

Document prepared date: 3/5/14

ROCK SAMPLE DATA								SUBSURFACE PROFILE				DISCONTINUITIES						
ELEV. (FT)	RUN TIME min./ft.	CORE NO.	% REC	% RQD	ROCK MASS		DEPTH (FT)	ELEV	GROUND SURFACE ELEVATION: 649.1 ft.	DEPTH	Depth	Type	Dip (Degrees)	Roughness	Weathering	Aperture	Perm Data	LABORATORY/FIELD TEST DATA
					HRD	WEA												
635								636.1	(NOTE: Rock was determined to be extremely weathered and was continued to be augered to 13.0')	13								
							15		Ohio Shale, Chagrin Formation									
									Sound, very soft to soft , fresh, dark gray, with medium gray, amorphous, SHALE, laminated, occasional clay seams fissile. 90% Shale, 10% Siltstone									
630											18.8	F	90	R	F	O		
	3.0	R-1	100	99	S-MH	F	20											
625																		
			25.5				25	623.6	-Occasional siltstone/fine-grained sandstone layers crossbedded 25.5' - 35.5'	25.5								
									- Packer test Test # 1 45' - 55' Test # 2 35' - 45' Test # 3 25' - 35'									
620											28.6	F	30	SR	F	C		
	3.2	R-2	100	97	S-MH	F	30											
615																		
			35.5				35	613.6		35.5								

Rock UCC = 1325 psi at 24.85'-25.5'

Rock UCC = 2010 psi at 34.0'-35.5'

1.0 E-07

ROCK CORE LOG 2013054A ROCK 9-7-2013 GPJ SOMAT.GDT 3/4/14

**BORING COORDINATES**  
 E(x) Coordinate 221312.9  
 N(y) Coordinate 677566.4  
**WATER LEVEL NOTES**  
 See Soil boring Log  
 DVT-AFP-ST-01 for water level readings  
**Remarks:**

Drilling Company: Ohio TestBor, Inc.  
 Driller: D.Hepner  
 Engineer on Rig: P. Rameshbabu  
 Drilling Method:  
 Total Depth: 92.0 ft.  
 Backfilled With: Bentonite-Grout  
 Date Started: 8/7/2013  
 Date Completed: 8/8/2013  
 Checked By: RAK



**Somat Engineering**  
 NEORS D Advanced Facilities Plan - Doan Valley Tunnel  
 Cleveland, OH

Document prepared date: 3/4/14

ROCK SAMPLE DATA							SUBSURFACE PROFILE				DISCONTINUITIES								
ELEV. (FT)	RUN TIME min./ft.	CORE NO.	% REC	% RQD	ROCK MASS		DEPTH (FT)	ELEV	GROUND SURFACE ELEVATION: 649.1 ft.	DEPTH	Depth	Type	Dip (Degrees)	Roughness	Weathering	Aperature	Perm Data	LABORATORY/FIELD TEST DATA	
					HRD	WEA													
610	3.1	R-3	100	100	S-MH	F	40	603.6	45.5								1.0 E-07	Rock UCC = 1703 psi at 40.72'-41.5'	
605							45												
600	2.8	R-4	100	100	S-MH	F	50	603.6	45.5									1.0 E-07	Rock UCC = 1555 psi at 50.73'-51.3'
595							55												
590	3.5	R-5	100	100	S-MH	F	60	593.6	55.5	- 95% Shale, 5% Siltstone 55.5' - 57.5'									Rock UCC = 1545 psi at 61.38'-61.94'

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ELEV. (FT)	RUN TIME min./ft.	CORE NO.	% REC	% RQD	ROCK MASS		DEPTH (FT)	ELEV	GROUND SURFACE ELEVATION: 649.1 ft.	DEPTH	Depth	Type	Dip (Degrees)	Roughness	Weathering	Aperature	Perm Data	LABORATORY/FIELD TEST DATA	
					HRD	WEA													
585							65												
			65.5					583.6		65.5									
580							70												
	3.1	R-6	100	100	S-MH	F													
																			Rock UCC = 1807 psi at 74.05'-75.11'
575							75												
			75.5					573.6		75.5									
570							80												
	3.2	R-7	100	100	S-MH	F													
																			Rock UCC = 1531 psi at 79.5'-80.18'
565							85												
			85.5					563.6		85.5									

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**WATER LEVEL NOTES**

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DVT-AFP-ST-01 for water level readings

**Remarks:**

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Driller: D.Hepner

Engineer on Rig: P. Rameshbabu

Drilling Method:

Total Depth: 92.0 ft.

Backfilled With: Bentonite-Grout

Date Started: 8/7/2013

Date Completed: 8/8/2013

Checked By: RAK



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Cleveland, OH**

Document prepared date: 3/4/14

PROJECT NO. 2013054A

DATE 8/7/2013 - 8/8/2013 LOG OF TEST BORING NO: DVT-AFP-ST-01

ROCK SAMPLE DATA							SUBSURFACE PROFILE				DISCONTINUITIES								
ELEV. (FT)	RUN TIME min./ft.	CORE NO.	% REC	% RQD	ROCK MASS		DEPTH (FT)	ELEV	GROUND SURFACE ELEVATION: 649.1 ft.	DEPTH	Depth	Type	Dip (Degrees)	Roughness	Weathering	Aperture	Perm Data	LABORATORY/FIELD TEST DATA	
					HRD	WEA													
560	3.0	R-8	100	100	S-MH	F	90												Rock UCC = 2683 psi at 91.0'-92.5'
				92.0				557.1		92									
									- 90% Shale, 10% Siltstone 90.4' - 92.0'										
									End of Boring at 92 ft.										
555							95												
550							100												
545							105												
540							110												

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