



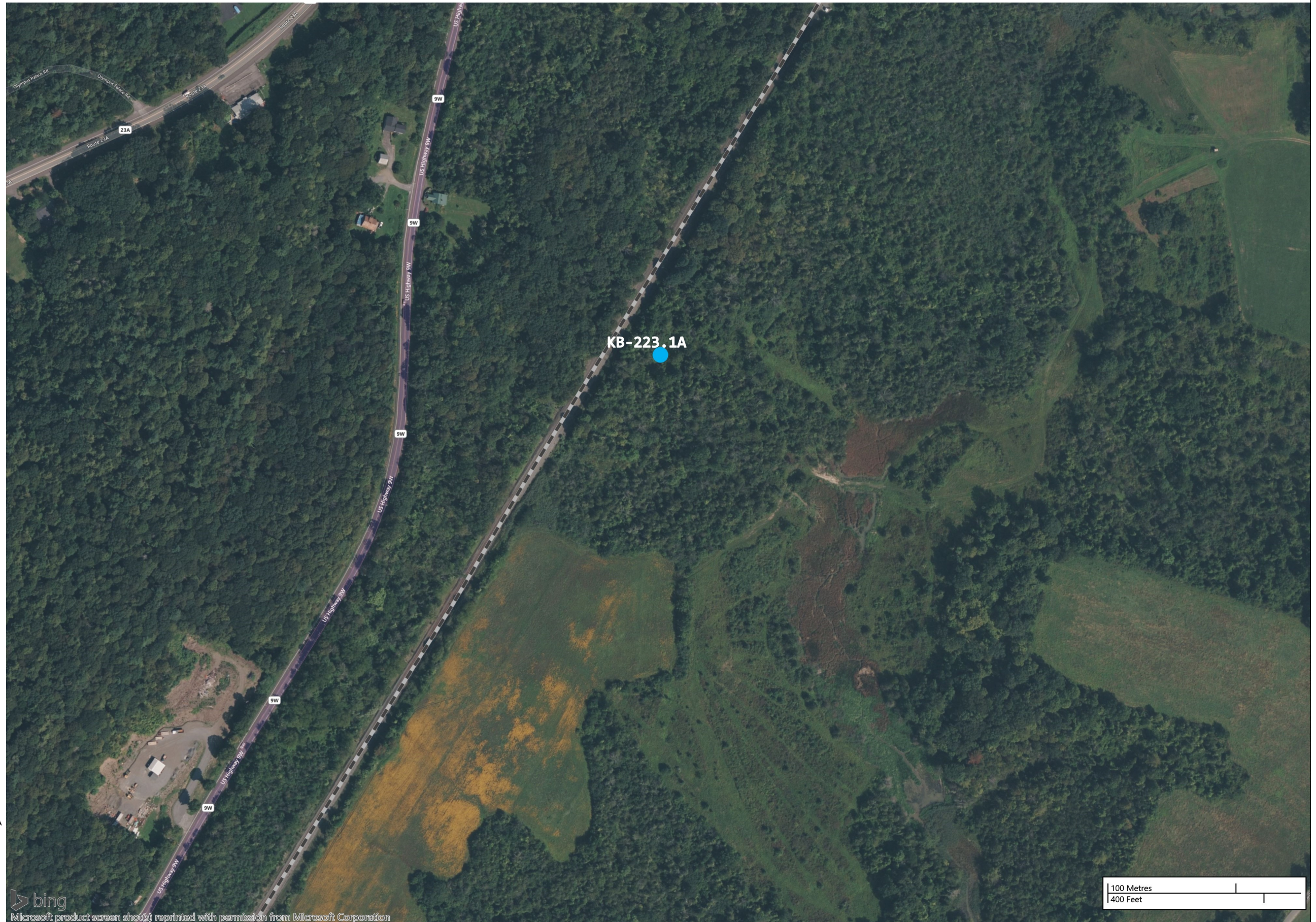
Package 7A Phase 3 Borings
Champlain Hudson Power Express
New York

PROJECT NUMBER 20001480

CREATED BY	Kiewit
DATE	12/08/2022

Legend Key

● Kiewit Borings (Phase 3)





Kiewit

EXPLORATORY BORING LOG

Champlain Hudson Power Express
New York

BORING NO: KB-223.1A

PROJECT NUMBER 20001480
START DATE 09/08/2022
FINISH DATE 09/12/2022

LOGGED BY A. McCart
DRILLER/RIG M. Eaves / CME-850
DRILL CONTRACTOR Parratt Wolff

COORDINATES N 1229202.46
E 657065.28
GROUND ELEV. 114.7 ft
HAMMER TYPE/EFF. Automatic

Depth (ft)	Elevation (ft)	Graphic Log	Material Description	Sample Type	Core Run No.	Recovery %	Pocket Pen. (tsf)	Blow Counts (N Value)	Notes	Legend
										▲ SPT N Value ● MC (%) — PL & LL (%) ☒ Fines Content (%)
	114.4		4" Topsoil						Boring advanced with 4.25" ID HSA	
			FAT CLAY (CH), light brown with gray mottling, soft to very stiff, moist			62%		1-3-3-3 (6)		
						71%		3-5-7-8 (12)		
5			Dark brown, soft clay seam at 4.5 - 4.6 ft			84%		1-3-5-7 (8)		
						100%		8-9-10-14 (19)		
						100%		3-3-6-6 (9)		
10						100%		0-2-4-6 (6)		
15						92%		3-3-5-7 (8)		
20						100%		0-1-2-4 (3)		
25	89.2		SILT (MH), gray, firm to soft, moist, high plasticity			100%		2-3-3-7 (6)		
30										



Kiewit

EXPLORATORY BORING LOG

Champlain Hudson Power Express
New York

BORING NO: KB-223.1A

PROJECT NUMBER 20001480
START DATE 09/08/2022
FINISH DATE 09/12/2022

LOGGED BY A. McCart
DRILLER/RIG M. Eaves / CME-850
DRILL CONTRACTOR Parratt Wolff

COORDINATES N 1229202.46
E 657065.28
GROUND ELEV. 114.7 ft
HAMMER TYPE/EFF. Automatic

Depth (ft)	Elevation (ft)	Graphic Log	Material Description	Sample Type	Core Run No.	Recovery %	RQD	Pocket Pen. (tsf)	Blow Counts (N Value)	Notes	Legend			
											▲	●	—	☒
											20	40	60	80
			SILT (MH), gray, firm to soft, moist, high plasticity Softer with depth			100%			1-2-1-3 (3)		▲			
35						100%			0-0-2-2 (2)		▲			
40						100%			0-0-2-2 (2)		▲			
45	69.7		LEAN CLAY with Sand (CL), gray, stiff, fine to coarse, wet			92%			0-0-4-12 (4)		▲	●	—	☒
	67.7		Weathered rock, gravel sized pieces in end of spoon											
50						100%			50/2"					▲
55						100%			50/3"					▲
57.2			Graywacke, gray, very closely to moderately spaced discontinuities, unweathered Vertical fracture at 58.7 - 59.3 ft											
60														



Kiewit

EXPLORATORY BORING LOG

Champlain Hudson Power Express
New York

BORING NO: KB-223.1A

PROJECT NUMBER	20001480	LOGGED BY	A. McCart	COORDINATES	N 1229202.46 E 657065.28
START DATE	09/08/2022	DRILLER/RIG	M. Eaves / CME-850	GROUND ELEV.	114.7 ft
FINISH DATE	09/12/2022	DRILL CONTRACTOR	Parratt Wolff	HAMMER TYPE/EFF.	Automatic

Depth (ft)	Elevation (ft)	Graphic Log	Material Description	Sample Type	Core Run No.	Recovery %	RQD	Pocket Pen. (tsf)	Blow Counts (N Value)	Notes	Legend			
											▲	●	—	☒
											SPT N Value	MC (%)	PL & LL (%)	Fines Content (%)
											20	40	60	80
			Graywacke, gray, very closely to moderately spaced discontinuities, unweathered		1	97%	83			UCS = 7441 psi				
			Frequent vertical fractures below 63.5 ft		2	83%	44							
65														
			Interbedded with shale and trace calcite veins at 65.5 - 71.5 ft		3	83%	83							
70					4	68%	43			UCS = 7441 psi				
			Occasional calcite veins, no fractures or joints, widely spaced discontinuities at 73 - 77 ft		5	79%	72							
75														
					6	100%	94							
80			Interbedded with shale at 80 - 82 ft							UCS = 7441 psi				
			Occasional calcite veins, dark gray to gray below 82 ft		7	100%	70							
85	29.7		Boring Terminated at 85 ft											
90														

KB-223.1A - Runs 1 through 5



KB-223.1A - Runs 6 through 7



Summary of Laboratory Results

Sheet 2 of 2

BORING ID	Depth (Ft.)	Water Content (%)
KB-222.6A	15-17	1.2
KB-222.6A	35-37	35.8
KB-222.6A	50-52	41.7
KB-222.6A	65-67	38.4
KB-223.1A	6-8	31.3
KB-223.1A	25-27	39.6
KB-223.1A	45-47	22.0
KB-226.1	6-8	33.3
KB-226.1	20-22	37.7
KB-226.8A	4-6	35.5
KB-226.8A	20-22	37.4
KB-226.8A	38-40	46.7

PROJECT: LAB Testing

SITE: Champlain- Hudson Power Express



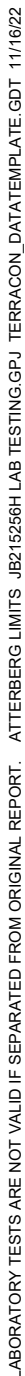
PROJECT NUMBER: JB215256H

CLIENT: Kiewit Engineering (NY) Corp
Lone Tree, CO

EXHIBIT: B-2

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. SMART LAB SUMMARY-PORTRAIT JB215256H LAB TESTING.GPJ TERRACON_DATA\TEMPLATE.GDT 11/16/22

ASTM D4318



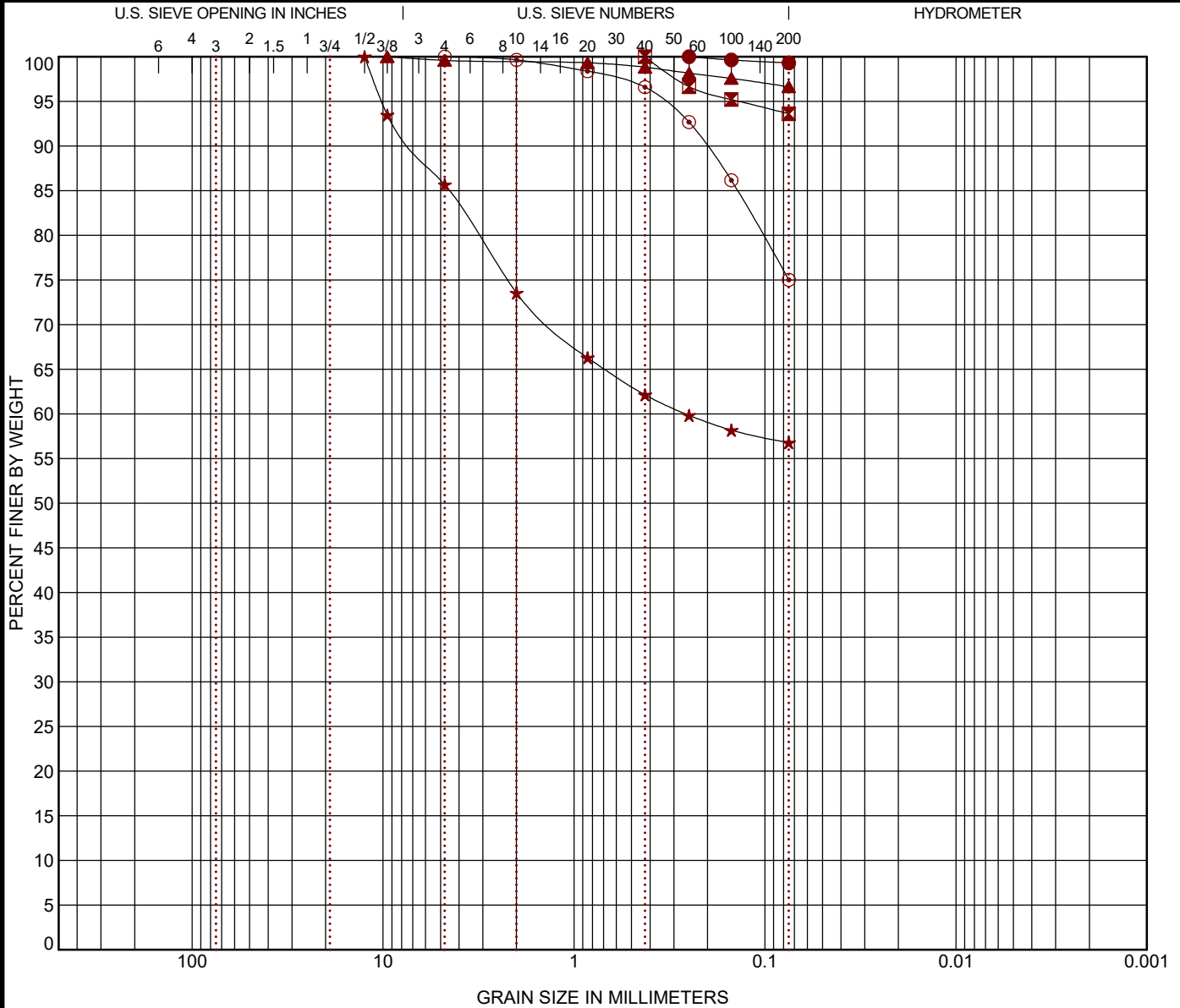
LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ATTERBERG LIMITS JB215256H LAB TESTING.GPJ TERRACON_DATATEMPLATE.GDT 11/16/22

EXHIBIT: B-3

GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS-2 JB215256H LAB TESTING.GPJ TERRACON_DATATEMPLATE.GDT 11/16/22



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Boring ID	Depth (Ft)	USCS Classification				WC (%)	LL	PL	PI	Cc	Cu
● KB-222.6A	65 - 67	SILT (ML)				38.4	43	28	15		
☒ KB-223.1A	6 - 8	FAT CLAY (CH)				31.3	57	29	28		
▲ KB-223.1A	25 - 27	ELASTIC SILT (MH)				39.6	52	30	22		
★ KB-223.1A	45 - 47	SANDY LEAN CLAY (CL)				22.0	31	19	12		
⊙ KB-226.1	6 - 8	ELASTIC SILT with SAND (MH)				33.3	64	36	28		
Boring ID	Depth (Ft)	D ₁₀₀	D ₆₀	D ₃₀	D ₁₀	%Cobbles	%Gravel	%Sand	%Silt	%Fines	%Clay
● KB-222.6A	65 - 67	0.25				0.0	0.0	0.7		99.3	
☒ KB-223.1A	6 - 8	0.425				0.0	0.0	6.4		93.6	
▲ KB-223.1A	25 - 27	9.5				0.0	0.4	3.0		96.6	
★ KB-223.1A	45 - 47	12.5	0.259			0.0	14.3	28.9		56.8	
⊙ KB-226.1	6 - 8	4.75				0.0	0.0	25.0		75.0	

PROJECT: LAB Testing

SITE: Champlain- Hudson Power Express



PROJECT NUMBER: JB215256H

CLIENT: Kiewit Engineering (NY) Corp
Lone Tree, CO

EXHIBIT: B-10

Client

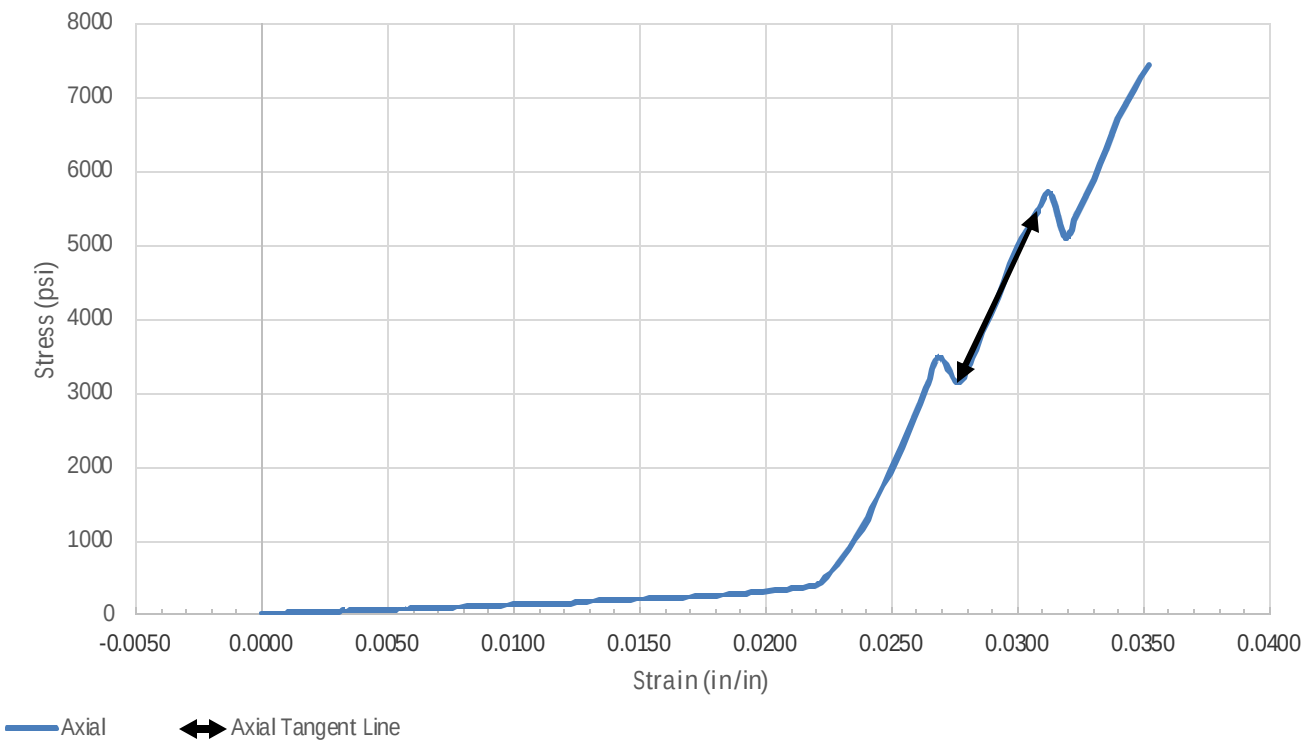
Kiewit Engineering (NY) Corp

Project

LAB Testing

Project No. JB215256H

ASTM D7012 Stress/ Strain Curve



SAMPLE LOCATION

Site:	LAB Testing		
Description:	Greywacke, Broke along Calcite vein		
Boring:	KB-223.1A	Depth (feet):	62.5-65.5

SPECIMEN INFORMATION

Sample No.:	RC2	Mass (g):	561.63
Length (in.):	4.1	Diameter (in.):	1.97
L/D Ratio:	2.08	Density (pcf):	171.21

TEST RESULTS

Failure Load (lbs):	22679
Failure Strain (in/in):	0.037
Unconfined Compressive Strength (psi):	7,441
Elastic Modulus, E, (ksi):	726
Time of Failure (min):	03:14
Rate of Loading (in/sec):	0.04
Moisture Content Post-break:	0.34%

Rock Core D7012 Method C



Client	Project
Kiewit Engineering (NY) Corp	LAB Testing

Project No. JB215256H

Equipment:	TICCS ID:
Calipers	W-44049
Scale	B-71466
Dial Indicator	C-70608
Compression (spherically seated)	C-48999

Samples were prepared and tested in accordance with ASTM D4543 and D7012. Deviations, if any, are noted below:
Notes:

- Per ASTM D4543, this specimen has not met the requirements for perpendicularity, by exceeding 0.250°.
- Per ASTM D4543, this specimen has not met the requirements for flatness, by exceeding 0.001 inches.
- Per ASTM D4543, this specimen has not met the requirements for parallelism, by exceeding 0.25°.
- Per ASTM D4543, this specimen has not met the requirements for flatness, by exceeding 0.001 inches.

According to ASTM D7012 Section 8.2.1, this specimen, although not meeting all requirements of ASTM D4543 is acceptable for testing. However, the results reported may differ from results obtained from a test specimen that meets the requirements of D4543.

DATE: May 16, 2023

TO: Zachary Bauer; Tetra Tech Rooney

FROM: Matthew Hawley, P.E.; Kiewit Engineering (NY) Corp.
Jaren Knighton; Kiewit Engineering (NY) Corp.

SUBJECT: Geotechnical Data: Segment 11 - Package 7A - HDD Crossing 121
Champlain Hudson Power Express Project
Catskill, New York

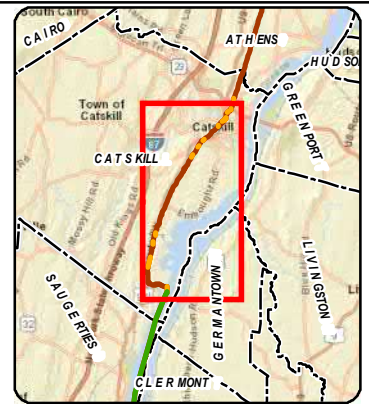
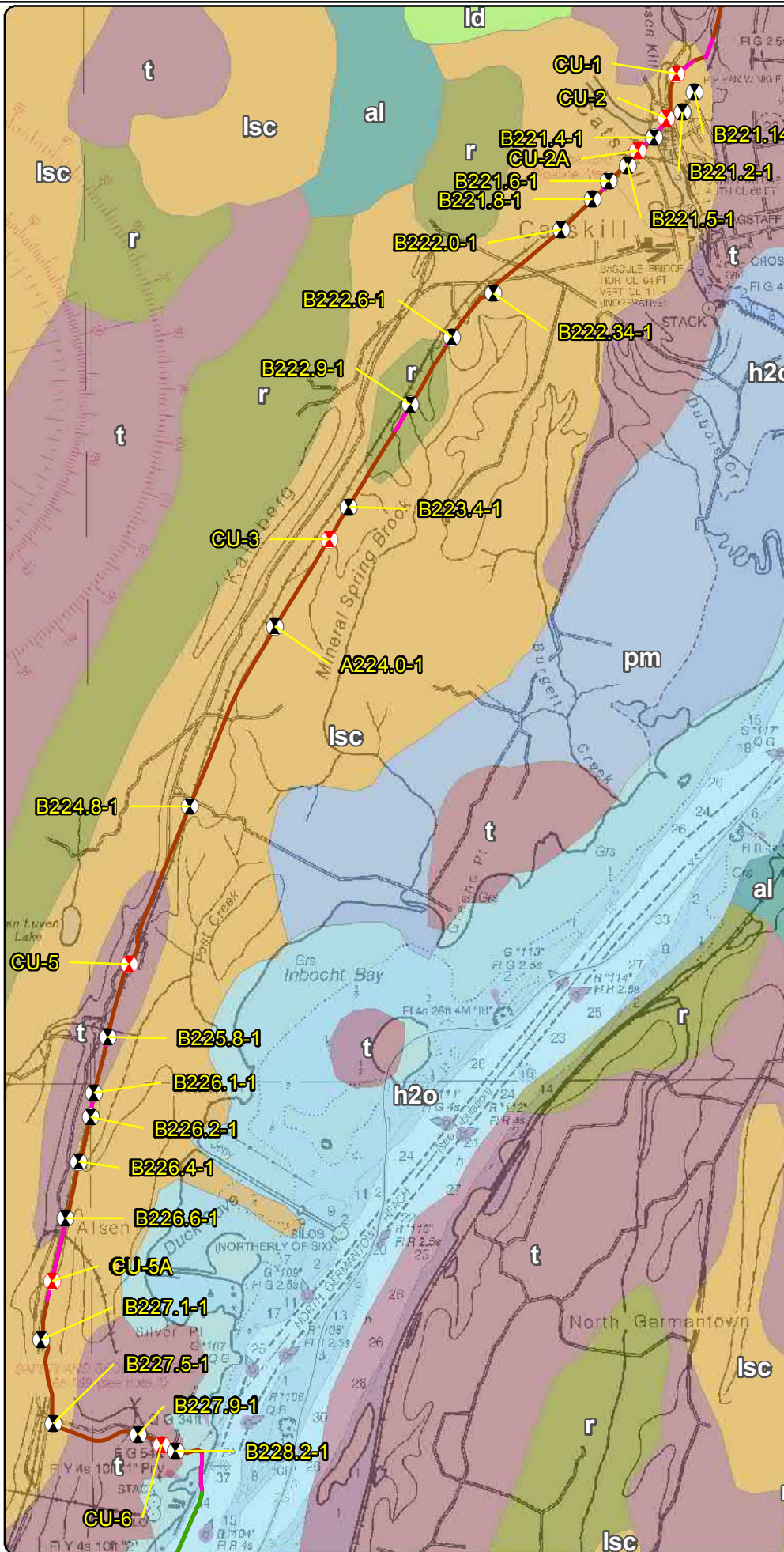
Kiewit Engineering is providing the attached geotechnical data for use in the horizontal direction drill (HDD) design for the Champlain Hudson Power Express project in Upstate New York. This HDD crossing is located south of Catskill, New York. The approximate station for the start of HDD crossing number 121 is STA 70310+50 (42.1745° N, 73.9132° W).

The geotechnical data at this HDD crossing is attached. The available data is taken from the investigations by TRC, AECOM, and Kiewit, referenced below. Additional exploration is planned for this location.

- TRC, Geotechnical Data Report, Champlain Hudson Power Express, Canadian Pacific Railway Borings MP 177.6-228.2, dated March 15, 2013.
- AECOM, Geotechnical Data Report, Upland Segments, Champlain Hudson Power Express, dated May 28, 2021.
- Kiewit Engineering Group Inc., Segment 11 Package 7A HDD Borings - Catskill, Champlain-Hudson Power Express, dated May 9, 2022.

Contact us if you have questions or require additional information.

HDD 121
Borings B225.8-1, K-225.9, CU-5
Segment 11 - Design Package 7A



LEGEND

- 2021 Boring Location
- Previous (2013) Boring Location
- Terrestrial Route HVDC
- Submarine Route HVDC
- Terrestrial Route HVAC
- Preliminary HDD Locations
- Preliminary Pipe Bridge Location
- Town Boundary
- County Boundary

Surficial Geology

- al - Recent alluvium
- h2o - Water
- ld - Lacustrine delta
- lsc - Lacustrine silt and clay
- pm - Swamp deposits
- r - Bedrock
- t - Till



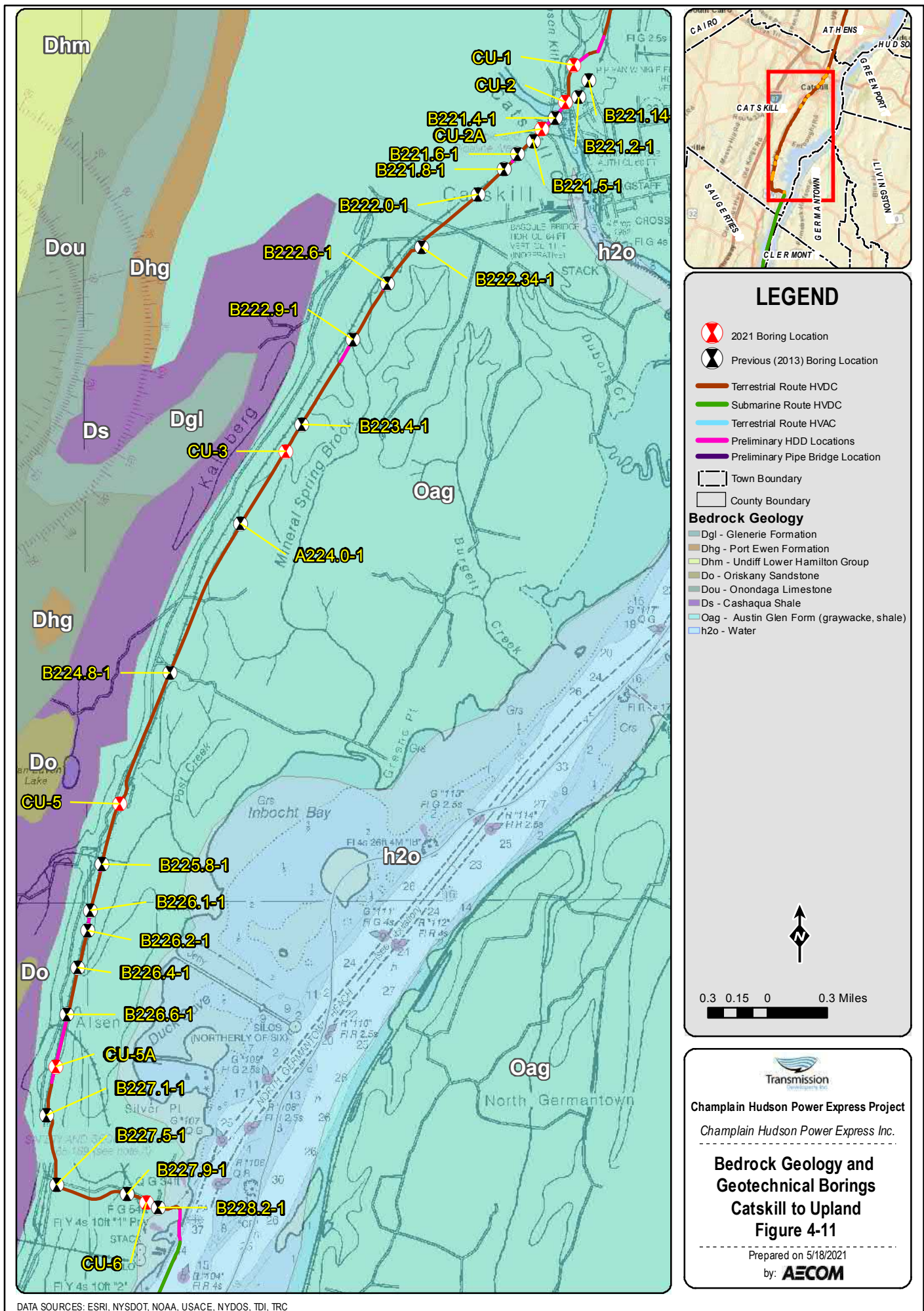
0.3 0.15 0 0.3 Miles

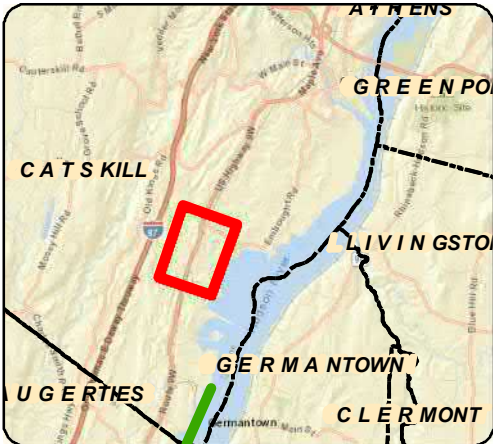
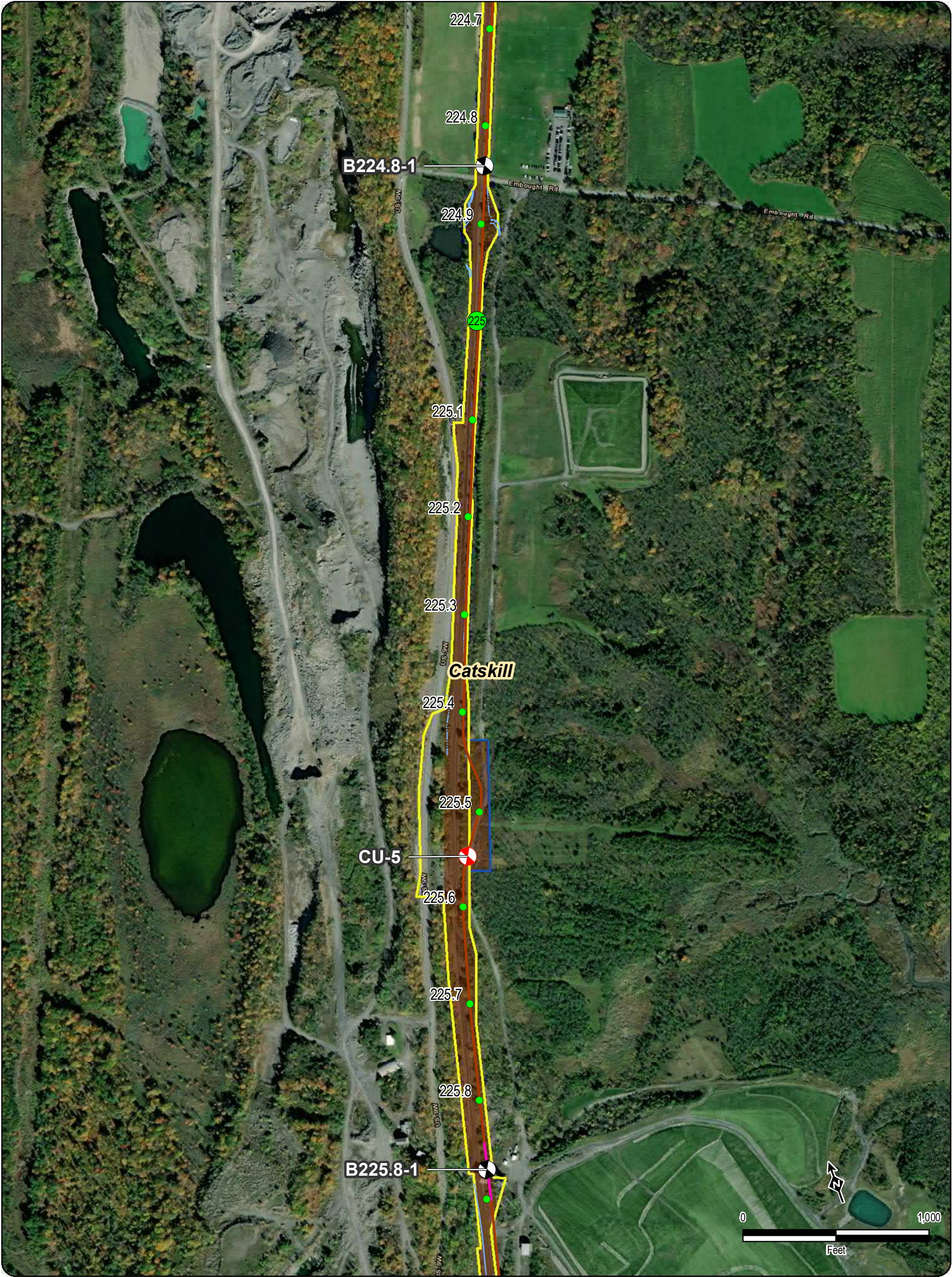


Champlain Hudson Power Express Project
Champlain Hudson Power Express Inc.

Surficial Geology and Geotechnical Borings Catskill to Upland Figure 3-11

Prepared on 5/3/2021
by: **AECOM**





111.8	Certified Milepost - Tenths	Streams/Ditches
111.8	Certified Milepost	Railroad ROW
○	Preferred Alternative Milepost - Tenths	Deviation Zone
135	Preferred Alternative Milepost	Deviation Zone Outside ROW
—	Terrestrial Route HVDC	Preferred Alternative Deviation Zone
—	Submarine Route HVDC	Preferred Alternative Deviation Zone Outside ROW
—	Terrestrial Route HVAC	Town Boundary
—	Preliminary HDD Locations	Village Boundary
—	Preliminary Pipe Bridge Location	State Park (OPRHP)
⊗	2021 Boring Location	Parcel Ownership
⊗	Previous (2013) Boring Location	TOWN NAME
		Road Name
		Village Name

Champlain Hudson Power Express Project
Champlain Hudson Power Express Inc.

BORING LOCATION PLAN
Catskill to Upland
Figure A-11
Sheet 4 of 6

Prepared by: **AECOM** 5/20/2021



TEST BORING LOG

PROJECT: TDI CHAMPLAIN HUDSON POWER EXPRESS

LOCATION: CSX RAILROAD ROW, NY

BORING B225.8-1

G.S. ELEV. N/A

FILE 195651

SHEET 1 OF 1

GROUNDWATER DATA

FIRST ENCOUNTERED NR			
DEPTH	HOUR	DATE	ELAPSED TIME
DRY	NR	12/2	0 HR

METHOD OF ADVANCING BOREHOLE

a	FROM	0.0'	TO	10.0'
d	FROM	10.0'	TO	30.0'

DRILLER	R. CARUSO
HELPER	C. SMART
INSPECTOR	N/A
DATE STARTED	12/01/2012
DATE COMPLETED	12/02/2012

DEPTH	A	B	C	DESCRIPTION	Wn	REMARKS
	S-1	10 28 45 50/0.1		GRAY M/F/C SAND, SM SILT, SM F/C GRAVEL (FILL)	5.6	
	S-2	50/0.0				
5			4.0	BROWN F/M/C SAND, SM F/ GRAVEL, TR SILT	6.0	
	S-3	3 4 7 9				
	S-4	8 4 7 8		BROWN F/M/C SANDY SILT, TR TO SM F/ GRAVEL, TR CLAY	19.0	
10	S-5	5 4 6 6				
			13.5			
15	S-6	7 5 5		LIGHT BROWN TO BROWN CLAY, TR SILT, TR F/M SAND	37.1	
			18.5			
20	S-7	6 7 8		LIGHT BROWN SILT	33.3	
			23.5			
25	S-8	3 4 3		GRAY SILT, TR CLAY	39.5	
30	S-9	1 1 2	30.0	END OF BORING AT 30'		
35						

NEWPROJECTS TEST BORING LOG 195651_TDI_CSX.GPJ SITE BLAUVELT.GDT 3/12/13

DRN.	TBT
CKD.	PWK



SUMMARY OF LABORATORY TEST DATA

Project Name: TDI Champlain Hudson Power Express – CSX
 Client Name: Transmission Developers, Inc.
 TRC Project #: 195651

SAMPLE IDENTIFICATION			Soil Group (USCS System)	GRAIN SIZE DISTRIBUTION				PLASTICITY				Specific Gravity	Moisture Content (%)	Unit Weight (pcf)	Compressive Strength (tsf)	Organic Content (%)
Boring #	Sample #	Depth (ft)		Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Liquidity Index)					
	S-2	2.0-4.0	GP-GM	45.6	42.5	11.9		-	-	-	-	-	3.6	-	-	-
	S-3	4.0-6.0														
	S-4	6.0-8.0	-	-	-	-	-	-	-	-	-	19.3	-	-	-	
	S-5	8.0-10.0	-	-	-	-	-	-	-	-	-	24.4	-	-	-	
B224.8-1	S-2	2.0-4.0	-	-	-	-	-	-	-	-	-	-	30.3	-	-	-
	S-5	8.0-10.0	-	-	-	-	-	-	-	-	-	-	36.7	-	-	21.7
	S-6	13.5-15.0	-	3.5		5.1	91.5	-	-	-	-	2.83	35.5	87.7	-	-
	S-7	18.5-20.0											-	-		
	S-8	23.5-25.0	CL	22.6		13.5	63.9	37	24	13	0.7	2.77	33.3	-	-	-
	S-9	28.5-30.0														
B225.8-1	S-1	0.0-2.0	SM	17.1	55.2	27.7		-	-	-	-	-	5.6	-	-	-

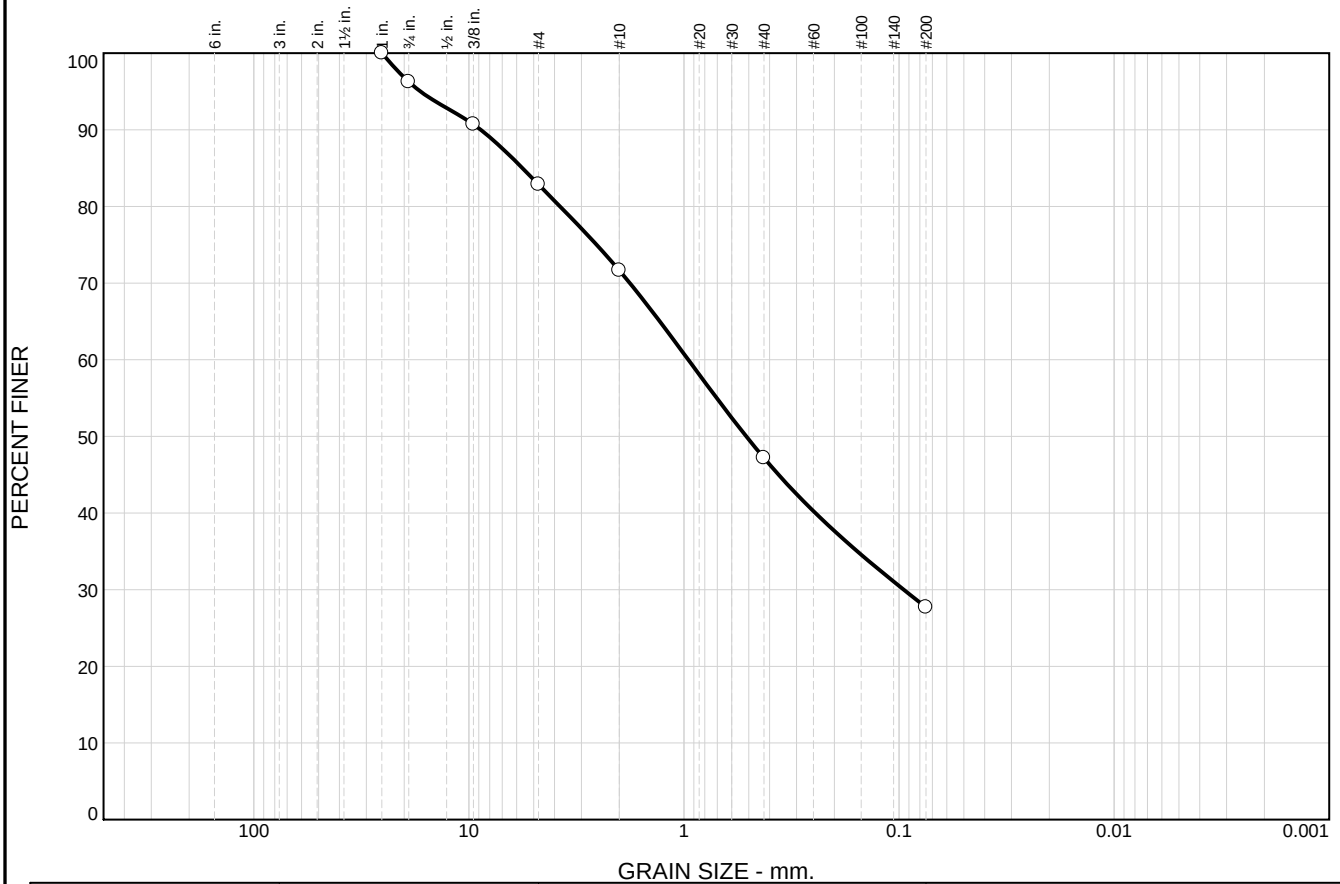


SUMMARY OF LABORATORY TEST DATA

Project Name: TDI Champlain Hudson Power Express – CSX
 Client Name: Transmission Developers, Inc.
 TRC Project #: 195651

SAMPLE IDENTIFICATION			Soil Group (USCS System)	GRAIN SIZE DISTRIBUTION				PLASTICITY				Specific Gravity	Moisture Content (%)	Unit Weight (pcf)	Compressive Strength (tsf)	Organic Content (%)
Boring #	Sample #	Depth (ft)		Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Liquidity Index					
	S-4	6.0-8.0	ML	20.2	25.0	54.8		-	-	-	-	-	19.0	-	-	-
	S-5	8.0-10.0														
	S-6	13.5-15.0	-	0.4	4.0	95.6		-	-	-	-	-	37.1	-	-	-
	S-7	18.5-20.0	-	-	-	-	-	-	-	-	-	-	33.3	91.7	-	-
	S-8	23.5-25.0	-	-	-	-	-	-	-	-	-	-	39.5	-	-	-
B226.1-1	S-1	0.0-2.0	-	-	-	-	-	-	-	-	-	-	3.4	-	-	-
	S-2	2.0-4.0	CL	4.2	13.4	82.4		-	-	-	-	-	37.7	-	-	-
	S-3	4.0-6.0	-	9.4		13.1	77.5	-	-	-	-	2.73	30.8	90.0	-	-
	S-4	6.0-8.0												-		
	S-6	13.5-15.0	CH	-	-	-	-	50	27	23	0.4	-	36.9	86.0	-	-

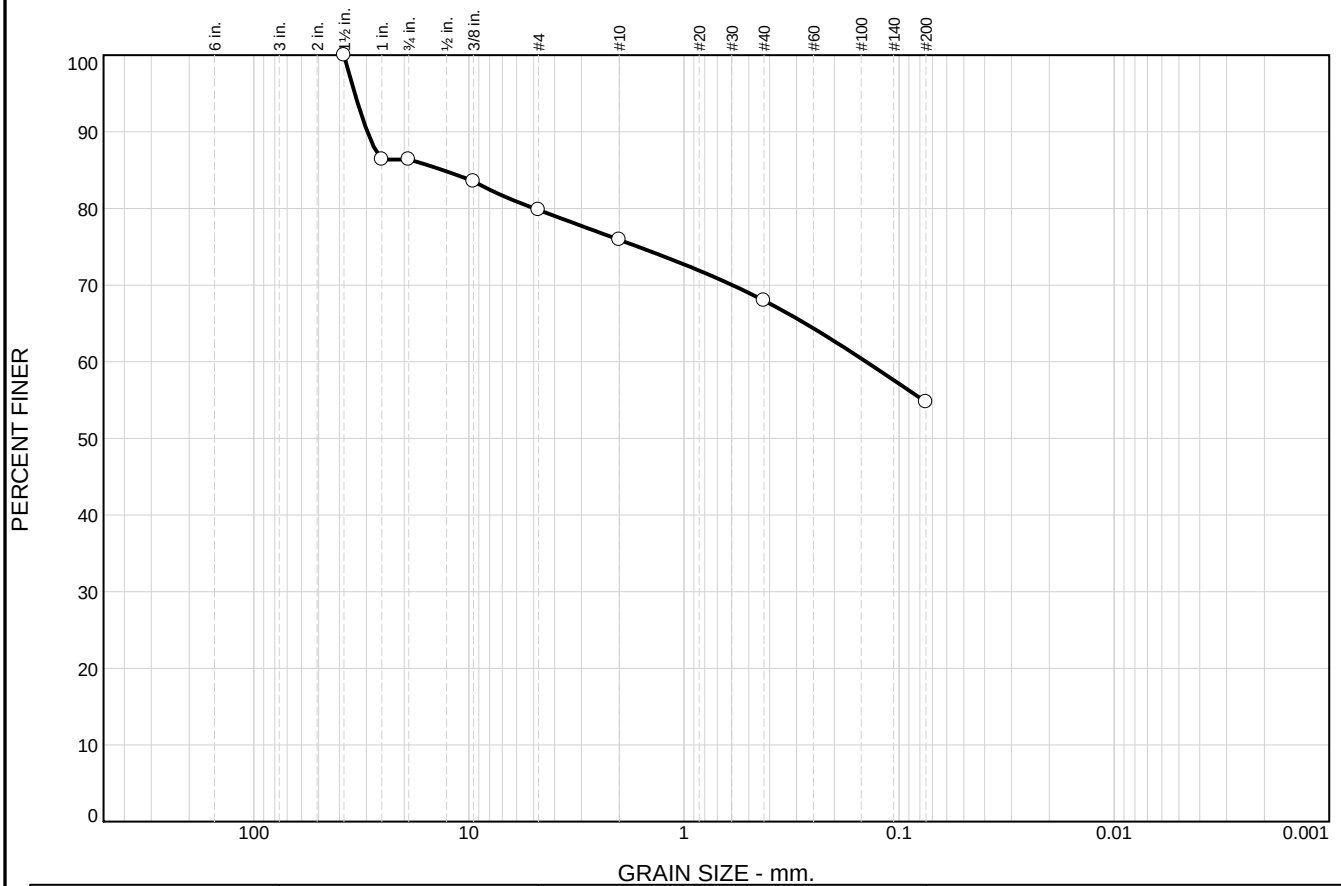
Particle Size Distribution Report



GRAIN SIZE - mm.											
% +3"		% Gravel		% Sand			% Fines				
		Coarse	Fine	Coarse	Medium	Fine	Silt		Clay		
○	0.0		3.7	13.4	11.2	24.5	19.5	27.7			
×	LL	PL	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u	
○			5.6382	0.9547	0.5134	0.0951					
Material Description								USCS	AASHTO		
○ GRAY M/F/C SAND, SM SILT, SM F/C GRAVEL								SM			
Project No. 195651 Client: TRANSMISSION DEVELOPERS INC. Project: TDI CHAMPLAIN HUDSON POWER EXPRESS - CSX ○ Source of Sample: B225.8-1 Depth: 0.0-2.0 FT Sample Number: S-1								Remarks: ○SAMPLE DESCRIPTION BASED ON VISUAL IDENTIFICATION AND LABORATORY ANALYSIS			
TRC Engineers, Inc. Mt. Laurel, NJ											
								Figure 134			

Tested By: TBT 01/10/13 Checked By: JPB 03/12/13

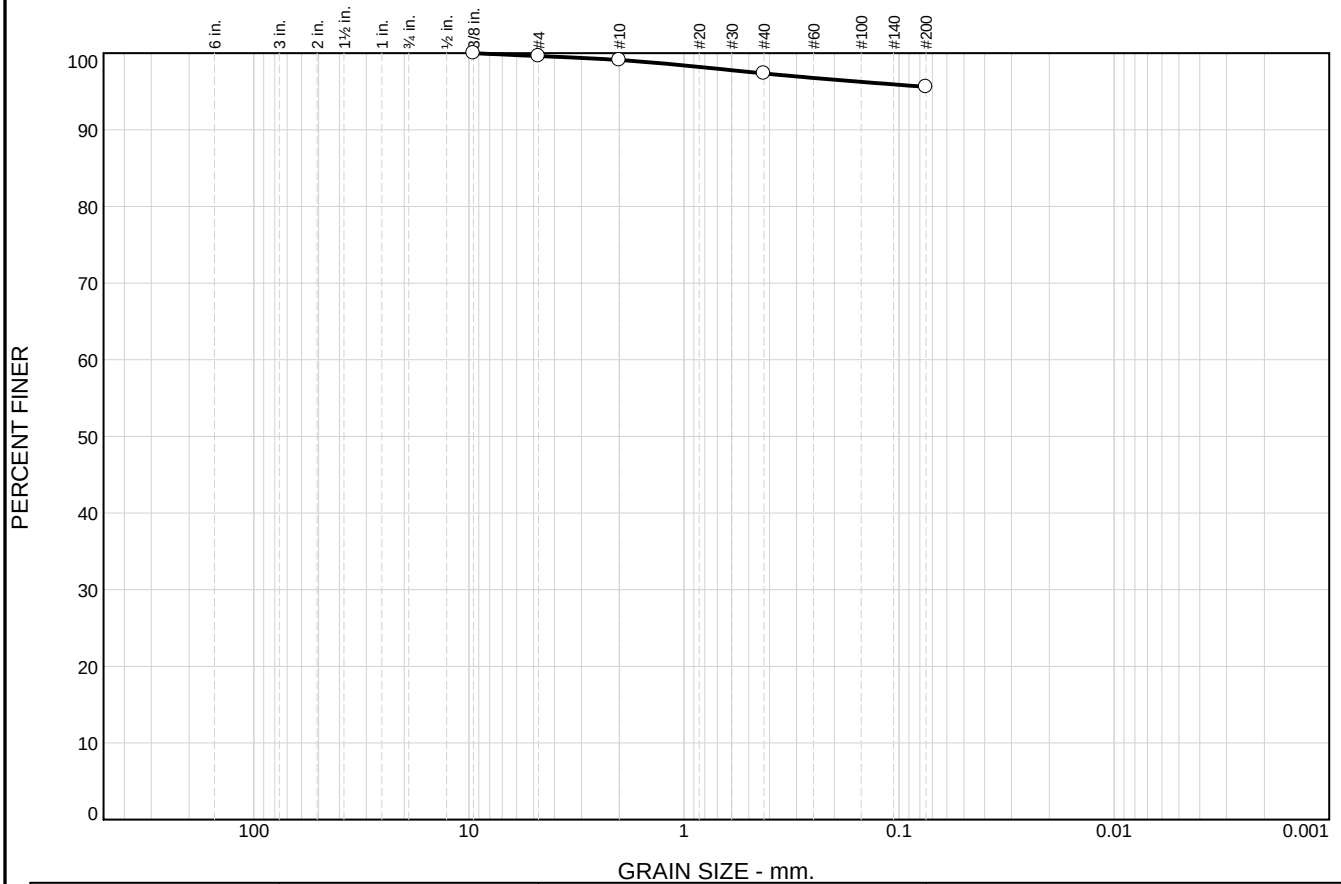
Particle Size Distribution Report



GRAIN SIZE - mm.										
% +3"		% Gravel		% Sand			% Fines			
		Coarse	Fine	Coarse	Medium	Fine	Silt Clay			
☐	0.0	13.6	6.6	3.9	7.9	13.2	54.8			
☒	LL	PL	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
☐			13.2027	0.1422						
Material Description								USCS	AASHTO	
○ BROWN SILT, SM F/M/C SAND, SM C/F GRAVEL								ML		
Project No. 195651 Client: TRANSMISSION DEVELOPERS INC. Project: TDI CHAMPLAIN HUDSON POWER EXPRESS - CSX ○ Sample Source: B225.8-1 Depth: 6.0-10.0 FT Sample No.: S-4 & S-5										
TRC Engineers, Inc. Mt. Laurel, NJ										
Remarks: ○ SAMPLE DESCRIPTION BASED ON VISUAL IDENTIFICATION AND LABORATORY ANALYSIS										
Figure 135										

Tested By: TBT 01/10/13 Checked By: JPB 03/12/13

Particle Size Distribution Report



GRAIN SIZE - mm.										
	% +3"	% Gravel		% Sand			% Fines			
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay		
☐	0.0	0.0	0.4	0.5	1.7	1.8	95.6			
☐										
☒	LL	PL	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
☐										
Material Description									USCS	AASHTO
○ LIGHT BROWN TO BROWN CLAY, TR SILT, TR F/M SAND										
Project No. 195651 Client: TRANSMISSION DEVELOPERS INC. Project: TDI CHAMPLAIN HUDSON POWER EXPRESS - CSX ○ Source of Sample: B225.8-1 Depth: 13.5-15.0 FT Sample Number: S-6									Remarks: ○ SAMPLE DESCRIPTION BASED ON VISUAL IDENTIFICATION AND LABORATORY ANALYSIS	
TRC Engineers, Inc. Mt. Laurel, NJ										

Figure 136

Tested By: TBT 01/10/13 Checked By: JPB 03/12/13

BORING CONTRACTOR: ADT												SHEET 1 OF 1					
DRILLER: Chris Chaillou												PROJECT NAME: CHPE -					
SOILS ENGINEER/GEOLOGIST: Chris French												PROJECT NO.: 60323056					
												HOLE NO.: CU-5					
BORING LOG												START DATE: 2/2/21					
LOCATION: MP - 225.55 (CSX rail line)												FINISH DATE: 2/2/21					
GROUND WATER OBSERVATIONS												OFFSET: N/A					
No water observed		TYPE		CASING		SAMPLER		DRILL BIT		CORE BARREL		DRILL RIG: CME LC-55					
		SIZE I.D.		Flush Joint Steel		California Modified		Tricone Roller Bit				BORING TYPE: SPT					
		SIZE O.D.		4"		2.5"		- -				BORING O.D.: 4.5"					
		HAMMER WT.		140 lbs		140 lbs		3 7/8"				SURFACE ELEV.:					
		HAMMER FALL		30"		30"						LONGITUDE:					
D E P T H	CORING RATE MIN/FT	S A M P L E		PEN.		REC.		BLOWS PER 6 in ON SAMPLER (ROCK QUALITY DESIGNATION)		N Corr. ⁽²⁾	USCS CLASS.	STRAT. CHNG. DEPTH	FIELD IDENTIFICATION OF SOILS				
		DEPTHS FROM - TO (FEET)	TYPE AND NO.	in	in												
1.0		0'-5'				Hand Cleared				30		SAND & GRAVEL	Black angular GRAVEL and fine-coarse sand, trace silt; frozen				
2.0													29	ML	CLAY and SILT	1.5'; Black angular GRAVEL and fine-coarse sand, trace silt; dense, moist	
3.0																43	ML
4.0		3'-5'		S-1						38	CL	CLAY and SILT					
5.0													31	CL	CLAY and SILT		
6.0		5'-7'		S-2	24"	4"	16	24	22							15	31
7.0										-	CL	CLAY and SILT					
8.0		7'-9'		S-3	24"	17"	14	20	24				29	-	CL	CLAY and SILT	
9.0													-				CL
10.0		9'-11'		S-4	24"	24"	24	32	34	35	-	CL					
11.0										-				CL	CLAY and SILT		
12.0		11'-13'		S-5	24"	24"	29	29	29				31			-	CL
13.0											-	CL	CLAY and SILT				
14.0		13'-15'		S-6	24"	24"	19	26	22	22				-	CL		
15.0										-						CL	CLAY and SILT
16.0		15'-17'		S-7	12"	12"	29	29	-		-	-	CL				
17.0											-			CL	CLAY and SILT		
18.0										-						CL	CLAY and SILT
19.0												-	CL				
20.0											-			CL	CLAY and SILT		
NOTES:																The information contained on this log is not warranted to show the actual subsurface condition. The contractor agrees that he will make no claims against AECOM if he finds that the actual conditions do not conform to those indicated by this log.	
(1) Thick-wall ring lined drive sampler (California sampler) used for SPT samples. Rings dimensions = 2-1/2" O.D. by 2-7/16" I.D. by 6" length.																	
(2) Correction factor: Ncorr=N*(2.0 ² -1.375 ²)/in./(3.0 ² -2.4 ²)/in. = N*0.65.																	
Soil description represents a field identification after D.M. Burmister unless otherwise noted.																	
SAMPLE TYPE:		S= SPLIT SPOON		U=SHELBY TUBE		R=ROCK CORE											
PROPORTIONS:		TRACE=1-10%		LITTLE=10-20%		SOME=20-35%		AND=35-50%									



Segment 11 Package 7A HDD Borings - Catskill
Champlain Hudson Power Express
New York

PROJECT NUMBER 20001480

CREATED BY Kiewit
DATE 05/09/2022

- Legend Key
- Kiewit Borings (2022)
 - Borings by Others





Kiewit

EXPLORATORY BORING LOG

Champlain Hudson Power Express
New York

BORING NO: K-225.9

PROJECT NUMBER 20001480
START DATE 03/10/2022
FINISH DATE 03/10/2022

LOGGED BY Rafael Salas Jr
DRILLER/RIG Corey B. / Diedrich D-90
DRILL CONTRACTOR Parratt Wolff

COORDINATES N 1215669.58
E 650608.25
GROUND ELEV. 97.9 ft
HAMMER TYPE/EFF. Manual - Safety

Depth (ft)	Elevation (ft)	Graphic Log	Material Description	Sample Type	Core Run No.	Recovery %	RQD	Pocket Pen. (tsf)	Blow Counts (N Value)	Notes	Legend
											▲ SPT N Value ● MC (%) — PL & LL (%) ☒ Fines Content (%)
											20 40 60 80
	95.9		FILL: Silty GRAVEL (GM), gray, medium to coarse, subangular, dense, moist			85%			7-16-30-50/2" (46)	Boring advanced with 3.5" ID HSA	
			CLAY (CL), silty with gravel, medium to coarse, brown to light brown, hard, moist			56%			9-50/3"	Ground wet near surface to around 2 ft, likely from surface runoff.	
5	93.9		SILT (ML) with gravel and sand, fine to medium gravel, coarse sand, gray, hard, dry			71%			1-5-50-31 (55)	pH = 8.22, Resistivity = 15,480 ohm/cm, Chloride Content = 70 mg/kg, Sulfate = 900 mg/kg	
						214%			30-50/1"		
	89.9		SILT (ML) with sand and clay, brown, gravel, fine to coarse, stiff, thin gray organic layer in middle of sample			50%			3-4-9-6 (13)	2.1 % Organics	
10	87.9		CLAY (CH), brown, stiff, wet								
			Rock stuck in shoe			50%			2-4-8-12 (12)		
15	82.9		CLAY (CH), light brown with gray seams, stiff to firm, moist to dry								
						100%			4-7-8-12 (15)		
20											
						100%			4-3-5-7 (8)		
25	72.9		CLAY (CL), light brown with gray seams, firm to soft, moist								
								1.5		3-inch ring sampler	
30						100%			3-3-4-8		



Kiewit

EXPLORATORY BORING LOG

Champlain Hudson Power Express
New York

BORING NO: K-225.9

PROJECT NUMBER 20001480
START DATE 03/10/2022
FINISH DATE 03/10/2022

LOGGED BY Rafael Salas Jr
DRILLER/RIG Corey B. / Diedrich D-90
DRILL CONTRACTOR Parratt Wolff

COORDINATES N 1215669.58
E 650608.25
GROUND ELEV. 97.9 ft
HAMMER TYPE/EFF. Manual - Safety

Depth (ft)	Elevation (ft)	Graphic Log	Material Description	Sample Type	Core Run No.	Recovery % RQD	Pocket Pen. (tsf)	Blow Counts (N Value)	Notes	Legend			
										▲ SPT N Value	● MC (%)	— PL & LL (%)	☒ Fines Content (%)
67.9			CLAY (CH), gray, soft to firm, moist										
35						100%		0-0-3-2 (3)		▲			
40						100%		0-0-5-6 (5)		▲			
45	52.9		Some chattering at about 43 ft Boring terminated at 45 ft										
50													
55													
60													



ATLANTIC TESTING LABORATORIES

WBE certified company

LABORATORY DETERMINATION OF MOISTURE CONTENT OF SOILS

ASTM D 2216

Page 1 of 1

PROJECT INFORMATION

Client: Kiewit Infrastructure Co.
Project: Champlain Hudson Power Express
United Cable Installation
Various Locations, New York

ATL Report No.: CD10279E-08-03-22

Report Date: March 28, 2022

Date Received: March 18, 2022

TEST DATA

Boring No.	Sample No.	Depth (ft)	Moisture Content (%)
K-225.9	S-6	13-15	43.0
	S-9/10	28-30	48.0
K-226.2A	S-4	6-8	36.0
	S-6	13-15	33.8
	S-9/10	28-30	38.1
K-226.2B	S-5 ¹	8-10	7.7
	S-8/9	21-23	37.6
	S-12	33-35	37.8
K-226.7	S-5/6	4-6	34.5
	S-9/10	8-10	39.7
	S-15/16	23-25	55.6
K-226.8	S-7/8	8-10	36.2
	S-13/14	23-25	54.7
K-227.0	S-5/6 ¹	4-6	23.5
	S-9/10	8-10	33.3
	S-15/16	23-25	40.6

Remarks

1. Sample mass was less than the minimum mass outlined in the referenced test method.

Reviewed By:

Date: 03/28/22



ATLANTIC TESTING LABORATORIES

WBE certified company

AMOUNT OF MATERIAL IN SOILS FINER THAN THE NO. 200 SIEVE ASTM D 1140

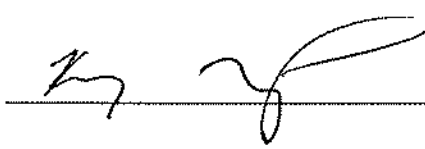
PROJECT INFORMATION

Client: Kiewit Infrastructure Co.
Project: Champlain Hudson Power Express
United Cable Installation
Various Locations, New York

ATL Report No.: CD10279E-08-03-22
Report Date: March 28, 2022
Test Date: March 18, 2022
Performed By: M. White

TEST DATA

Boring No.	Sample No.	Depth (ft)	Method (A or B)	Soak Time (min)	Initial Dry Weight (g)	% Finer than #200
K-225.9	S-6	13-15	A	10	48.43	97.9
K-225.9	S-9/10	28-30	A	10	100.48	99.9
K-226.2A	S-6	13-15	A	10	62.57	98.3
K-226.2A	S-9/10	28-30	A	10	74.20	96.7
K-226.2B	S-8/9	21-23	A	10	95.42	99.9
K-226.2B	S-12	33-35	A	10	144.57	98.3
K-226.7	S-9/10	8-10	A	10	87.63	99.6
K-226.7	S-15/16	23-25	A	10	52.32	99.9
K-226.8	S-7/8	8-10	A	10	92.92	100.0
K-226.8	S-13/14	23-25	A	10	59.61	100.0
K-227.0	S-9/10	8-10	A	10	180.64	54.8
K-227.0	S-15/16	23-25	A	10	87.65	99.8

Reviewed By: 

Date: 03/28/22



ATLANTIC TESTING LABORATORIES

WBE certified company

Page 1 of 2

LIQUID LIMIT, PLASTIC LIMIT, AND PLASTICITY INDEX OF SOIL ASTM D 4318

PROJECT INFORMATION

Client: Kiewit Infrastructure Co.
Project: Champlain Hudson Power Express
United Cable Installation
Various Locations, New York

ATL Report No.: CD10279E-08-03-22
Report Date: March 28, 2022
Date Received: March 18, 2022

TEST DATA

Boring No.	Sample No.	LL	PL	PI
K-225.9	S-6	58	24	34
K-225.9	S-9/10	37	21	16
K-226.2A	S-6	61	25	36
K-226.2A	S-9/10	61	26	35
K-226.2B	S-8/9	62	26	36
K-226.2B	S-12	50	24	26
K-226.7	S-9/10	65	27	38
K-226.7	S-15/16	59	26	33
K-226.8	S-7/8	63	26	37
K-226.8	S-13/14	52	23	29
K-227.0	S-9/10	54	26	28
K-227.0	S-15/16	57	24	33

SAMPLE INFORMATION

Boring No.	Sample No.	Maximum Grain Size (mm)	Estimated Amount of Sample Retained on No. 40 Sieve (%)	As Received Moisture Content (%)
K-225.9	S-6	0.074	0	43.0
K-225.9	S-9/10	0.050	0	48.0
K-226.2A	S-6	0.074	0	33.8
K-226.2A	S-9/10	0.074	0	38.1
K-226.2B	S-8/9	0.050	0	37.6
K-226.2B	S-12	0.074	0	37.8
K-226.7	S-9/10	0.050	0	39.7
K-226.7	S-15/16	0.050	0	55.6
K-226.8	S-7/8	0.050	0	36.2
K-226.8	S-13/14	0.050	0	54.7
K-227.0	S-9/10	4.76	6	33.3
K-227.0	S-15/16	0.050	0	40.6

Client: Kiewit Infrastructure Co.
Project: Champlain Hudson Power Express

ATL Report No. CD10279E-08-03-22

Date: March 28, 2022

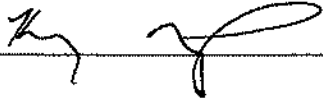
Page 2 of 2

PREPARATION INFORMATION

Boring No.	Sample No.	Preparation	Method of Removing Oversized Material
K-225.9	S-6	Air Dry	Not Necessary
K-225.9	S-9/10	Air Dry	Not Necessary
K-226.2A	S-6	Air Dry	Not Necessary
K-226.2A	S-9/10	Air Dry	Not Necessary
K-226.2B	S-8/9	Air Dry	Not Necessary
K-226.2B	S-12	Air Dry	Not Necessary
K-226.7	S-9/10	Air Dry	Not Necessary
K-226.7	S-15/16	Air Dry	Not Necessary
K-226.8	S-7/8	Air Dry	Not Necessary
K-226.8	S-13/14	Air Dry	Not Necessary
K-227.0	S-9/10	Air Dry	Pulverizing and Screening
K-227.0	S-15/16	Air Dry	Not Necessary

EQUIPMENT INFORMATION

Liquid Limit Procedure:	Multipoint - Method A	☒	Single Point - Method B	☐
Liquid Limit Apparatus:	Manual	☒	Motor Driven	☐
Liquid Limit Grooving Tool Material:	Plastic	☒	Metal	☐
Liquid Limit Grooving Tool Shape:	Flat	☒	Curved (AASHTO Only)	☐
Plastic Limit:	Hand Rolled	☒	Mechanical Rolling Device	☐

Reviewed By: 

Date: 03/28/22



ATLANTIC TESTING LABORATORIES

WBE certified company

PROJECT INFORMATION

Client: Kiewit Infrastructure Co.

ATL Report No.: CD10279E-08-03-22

Project: Champlain Hudson Power Express
United Cable Installation
Various Locations, New York

Report Date: March 28, 2022

Date Received: March 18, 2022

PERCENT ORGANICS, ASH CONTENT, AND MOISTURE CONTENT

ASTM D 2974

Boring No.	Sample No.	Organics (%)	Ash (%)	Moisture (%)	Test Method	Furnace Temperature (°C)
K-225.9	S-5	2.1	97.9	12.1	A	440

Reviewed By:

Date:

03/28/22



ATLANTIC TESTING LABORATORIES

CORROSION ANALYSIS SUITE

Client: Kiewit Infrastructure Co.

Project: Champlain Hudson Power Express

United Cable Installation

Location: Various Locations, New York

ATL Report No.

CD10279E-08-03-22

Report Date:

March 28, 2022

Date Received:

March 18, 2022

Sample: K-225.9, S-3

Depth (ft):

4-6

MEASURING pH OF SOIL FOR USE IN CORROSION TESTING

ASTM G 51

Type of Test	Soil Temperature (°C)	pH Readings			Average
Laboratory	20.0	8.21	8.22	8.22	8.22

pH of calibration standards used:

7.00

MEASUREMENT OF SOIL RESISTIVITY USING THE TWO-ELECTRODE SOIL BOX METHOD

ASTM G 187 (LABORATORY)

Test Date:

03/22/22

Performed by:

E. Hannon

Meter Used:

Miller 400A

Soil Box Factor:

1.29

Date Collected	Temperature at Collection (°C)	Measured Resistance (Ω)	Calculated Resistivity (Ω/cm)
10/19/2021	Not Provided	12,000	15,480

WATER-SOLUBLE CHLORIDE ION CONTENT IN SOIL

AASHTO T 291, Method A

Chloride by Mass of Soil (mg/kg)
70

WATER-SOLUBLE SULFATE IN SOIL

ASTM C 1580

Sulfate by Mass of Sample (%)	Sulfate by Mass of Sample (mg/kg)
0.09	900

Reviewed By:

Date:

03/28/22

DATE: December 16, 2022

TO: Zachary Bauer; Tetra Tech Rooney

FROM: Matthew Hawley, P.E.; Kiewit Engineering (NY) Corp. **mkh**
Jaren Knighton; Kiewit Engineering (NY) Corp.

SUBJECT: Geotechnical Data: Segment 11 – Package 7A – HDD Crossing 122 – Revision 1
Champlain Hudson Power Express Project
Catskill, New York

Kiewit Engineering is providing the attached geotechnical data for use in the horizontal direction drill (HDD) design for the Champlain Hudson Power Express project in Upstate New York. This HDD crossing is located south of Catskill, New York. The approximate station for the start of HDD crossing number 122 is STA 70341+50 (42.1673° N, 73.9160° W).

The geotechnical data at this HDD crossing is attached. The available data is taken from the previous investigation by TRC and the recent investigations by Kiewit, referenced below.

- TRC, Geotechnical Data Report, Champlain Hudson Power Express, Canadian Pacific Railway Borings MP 177.6-228.2, dated March 15, 2013.
- Kiewit Engineering (NY) Corp., Segment 11 Package 7A HDD Borings - Catskill, Champlain-Hudson Power Express, dated May 9, 2022.
- Kiewit Engineering (NY) Corp., Package 7A Phase 3 Borings, Champlain Hudson Power Express, New York, dated December 8, 2022.

Contact us if you have questions or require additional information.

HDD 122
Borings B226.1-1, B226.2-1,
K-226.2A, K-226.2B, KB-226.1
Segment 11 - Design Package 7A

CHPE Segment 11 - Package 7A

HDD Soil Boring Coordinates and Elevations

Firm	Boring	Northing (feet)	Easting (feet)	Ground Surface Elevation (feet)
TRC*	B221.0-1	1237452.6	663787.2	99.6
	B221.2-1	1236173.4	663261.8	115.0
	B221.4-1	1235622.5	662622.3	22.4
	B221.5-1	1235006.9	662058.8	95.5
	B221.6-1	1234675.8	661633.8	98.3
	B221.8-1	1234265.3	661277.2	99.4
	B222.34-1	1232191.5	659098.9	133.5
	B222.6-1	1231252.6	658182.3	113.7
	B222.9-1	1229751.0	657274.3	121.4
	B225.8-1	1215861.0	650622.7	91.0
	B226.1-1	1214654.4	650328.3	105.9
	B226.2-1	1214120.5	650254.4	108.5
	B226.6-1	1211894.7	649689.7	112.1
AECOM**	CU-1	1237028.6	663123.9	19.7
	CU-2	1236042.7	662897.0	24.8
	CU-2A	1235325.9	662268.9	38.1
	CU-5A	1210523.7	649411.8	118.4
	SC-5	1239310.3	664321.6	110.2
	SC-6	1237781.0	663919.8	101.6

Notes:

- Northings and Eastings are provided in NAD83 New York State Plane East Zone.

- Elevations are referenced to the NAVD88 datum.

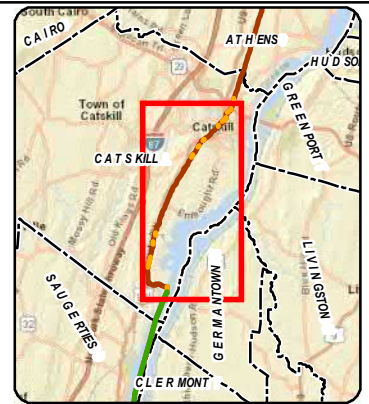
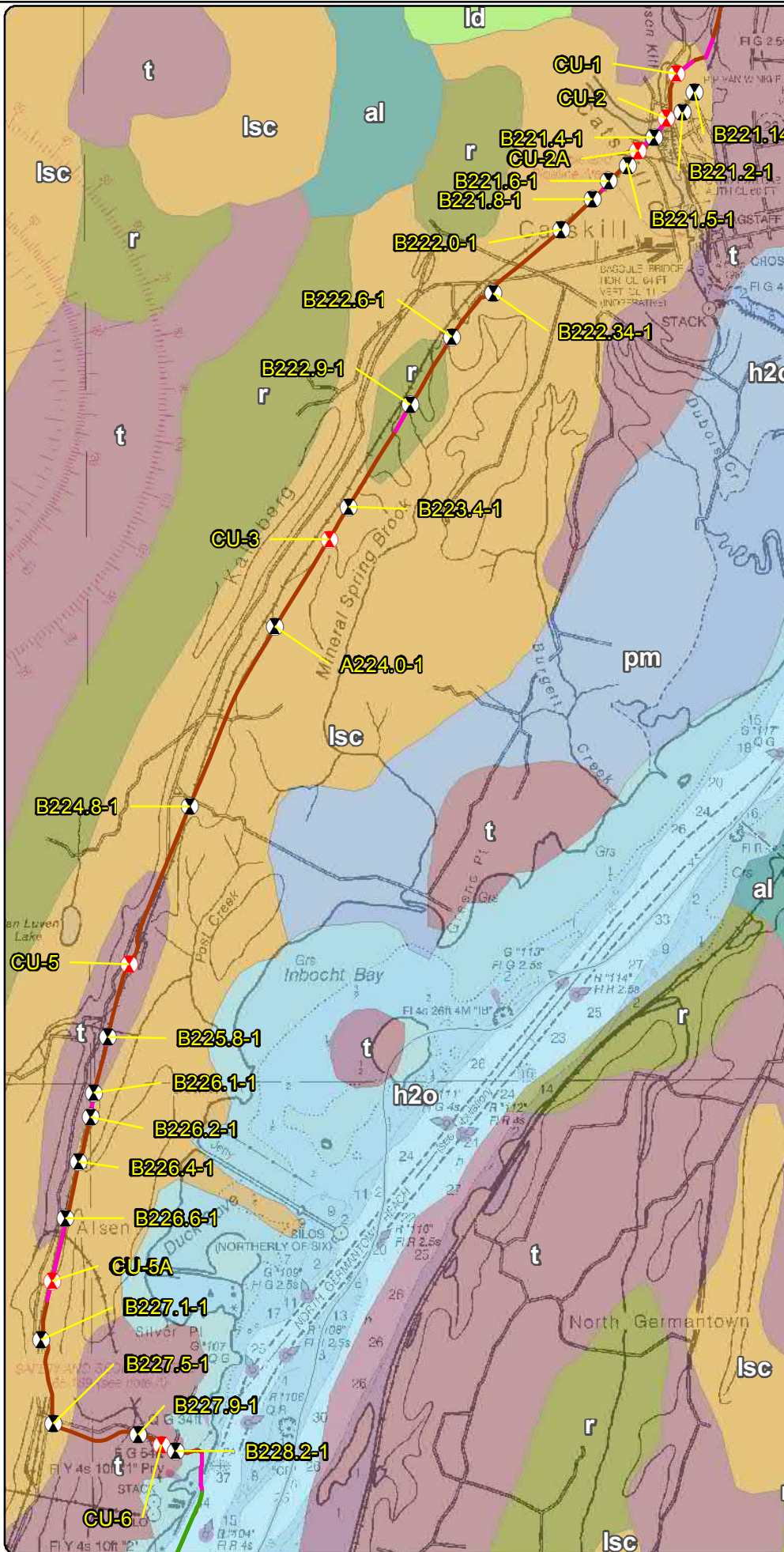
* TRC boring coordinates as shown in Table 1-6 in AECOM report (reference below). Boring elevations estimated from November 2021 topographic survey by Williams Aerial.

** AECOM boring coordinates and elevations as shown in Table 1-6 in AECOM report.

*** Kiewit boring coordinates and elevations are noted on the boring logs.

Reference:

AECOM, Geotechnical Data Report, Upland Segments: Putnam Station, Washington County, to Cementon, Green County, NY, Champlain Hudson Power Express, dated May 28, 2021.



LEGEND

- 2021 Boring Location
- Previous (2013) Boring Location
- Terrestrial Route HVDC
- Submarine Route HVDC
- Terrestrial Route HVAC
- Preliminary HDD Locations
- Preliminary Pipe Bridge Location
- Town Boundary
- County Boundary

Surficial Geology

- al - Recent alluvium
- h2o - Water
- ld - Lacustrine delta
- lsc - Lacustrine silt and clay
- pm - Swamp deposits
- r - Bedrock
- t - Till



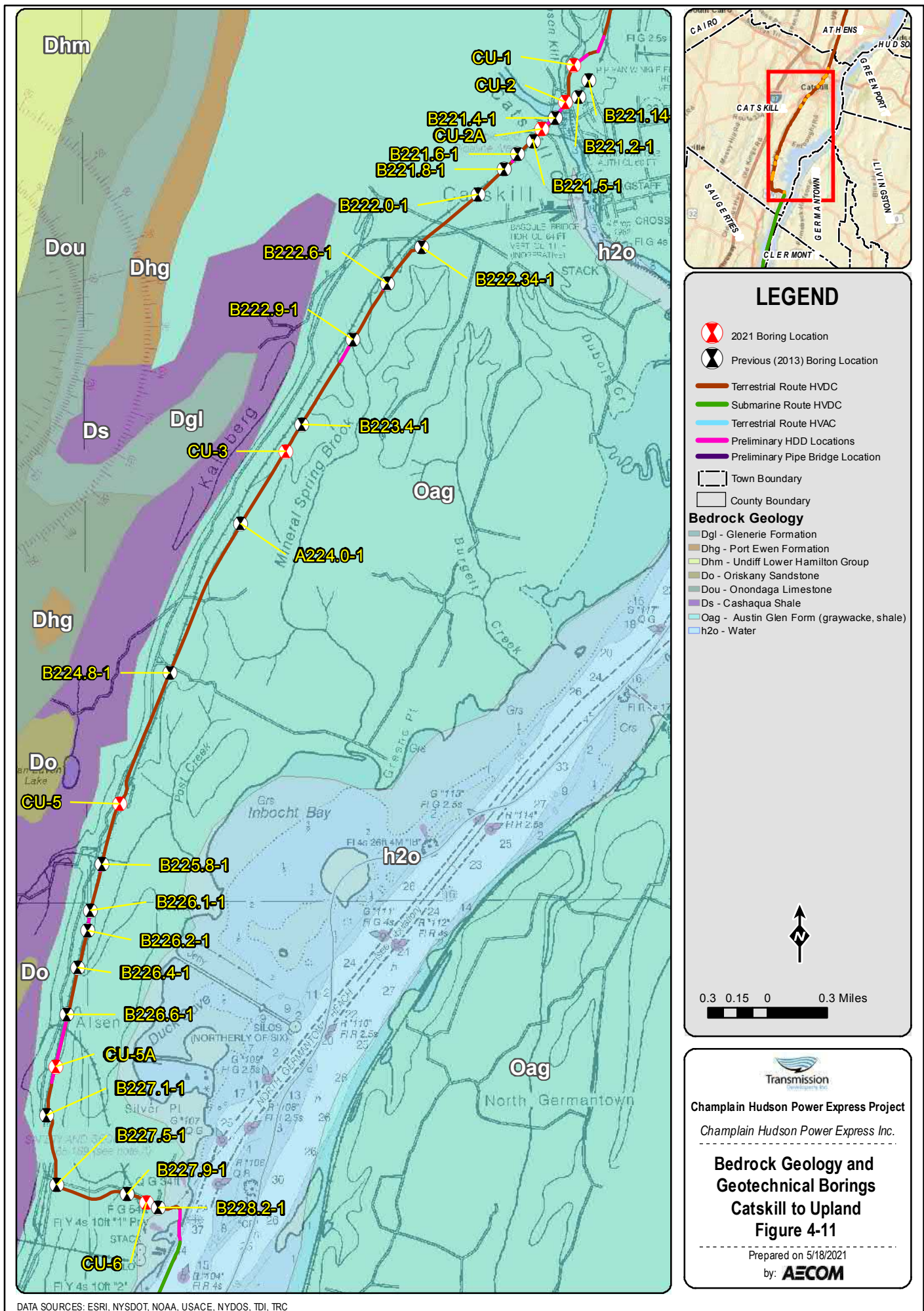
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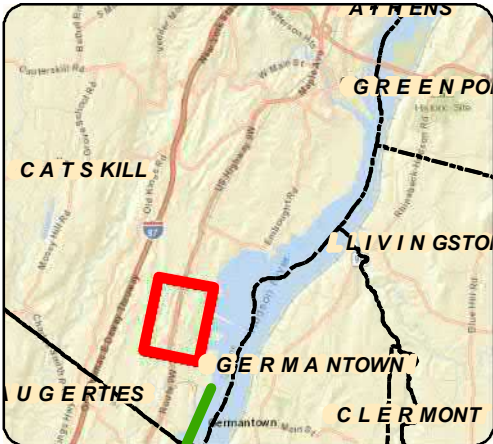
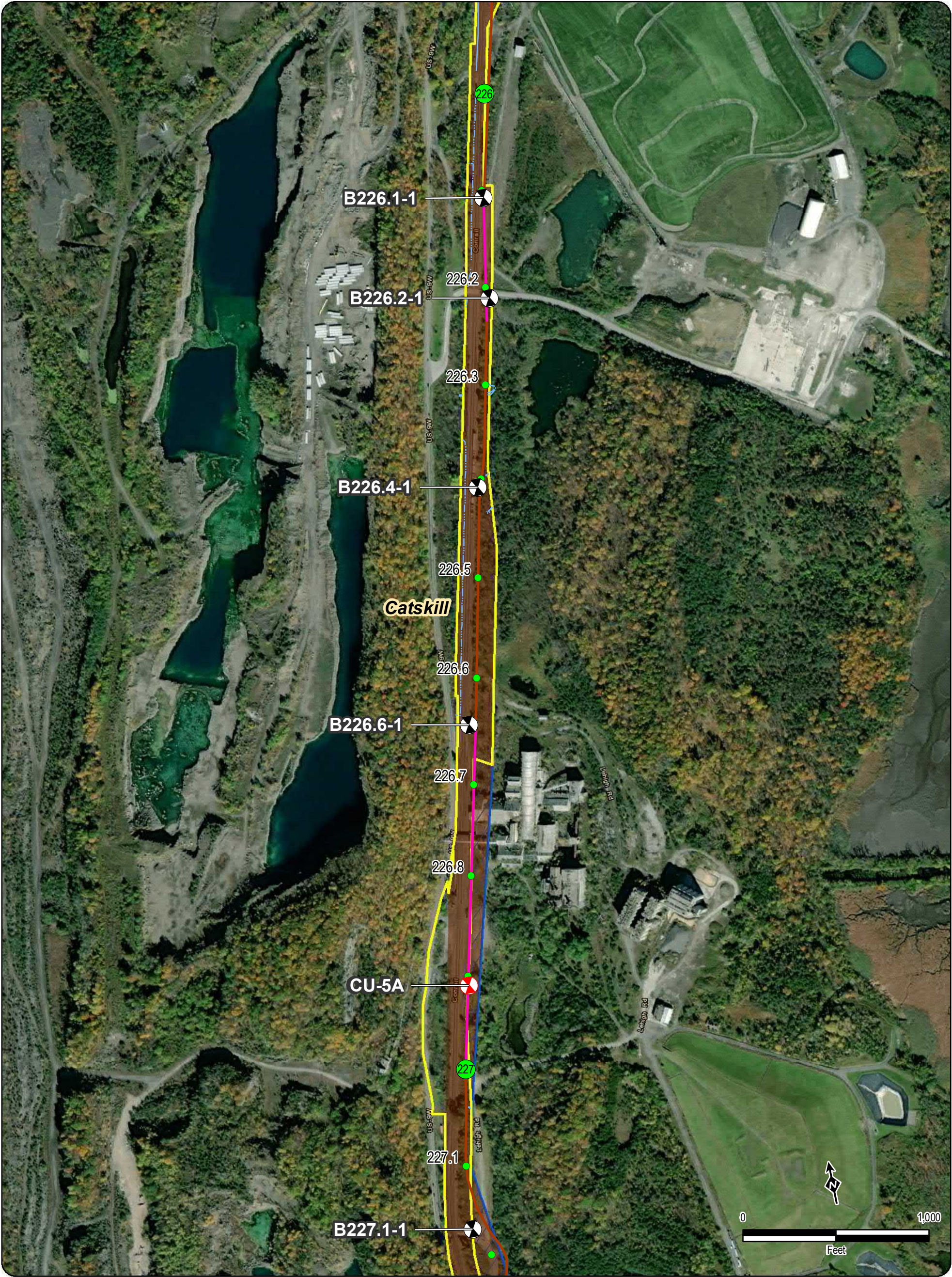


Champlain Hudson Power Express Project
Champlain Hudson Power Express Inc.

Surficial Geology and Geotechnical Borings Catskill to Upland Figure 3-11

Prepared on 5/3/2021
by: **AECOM**





111.8

Certified Milepost - Tenths

111.8

Certified Milepost

135

Preferred Alternative Milepost - Tenths

135

Preferred Alternative Milepost

Terrestrial Route HVDC

Submarine Route HVDC

Terrestrial Route HVAC

Preliminary HDD Locations

Preliminary Pipe Bridge Location

2021 Boring Location

Previous (2013) Boring Location

LEGEND

Streams/Ditches

Railroad ROW

Deviation Zone

Deviation Zone Outside ROW

Preferred Alternative Deviation Zone

Preferred Alternative Deviation Zone Outside ROW

Town Boundary

Village Boundary

State Park (OPRHP)

Parcel Ownership

TOWN NAME

Road Name

Village Name

Transmission
Developers Inc.

Champlain Hudson Power Express Project

Champlain Hudson Power Express Inc.

BORING LOCATION PLAN

Catskill to Upland

Figure A-11

Sheet 5 of 6

Prepared by:

AECOM

5/20/2021



TEST BORING LOG

PROJECT: TDI CHAMPLAIN HUDSON POWER EXPRESS

LOCATION: CSX RAILROAD ROW, NY

BORING B226.1-1

G.S. ELEV. N/A

FILE 195651

SHEET 1 OF 1

GROUNDWATER DATA

FIRST ENCOUNTERED NR			
DEPTH	HOUR	DATE	ELAPSED TIME
DRY	NR	12/2	0 HR

METHOD OF ADVANCING BOREHOLE

a	FROM	0.0'	TO	10.0'
d	FROM	10.0'	TO	30.0'

DRILLER R. CARUSO

HELPER C. SMART

INSPECTOR N/A

DATE STARTED 12/02/2012

DATE COMPLETED 12/02/2012

DEPTH	A	B	C	DESCRIPTION	Wn	REMARKS
	S-1	19 20 19 12	2.0	GRAY M/C SANDY F/C GRAVEL-SIZED ROCK FRAGMENTS, TR SILT (FILL)	3.4	
	S-2	5 6 6 7	4.0	GRAY CLAY, TR TO SM M/F/C SAND, TR F/ GRAVEL	37.7	
5	S-3	8 10 10 11				
	S-4	4 6 5 5			30.8	
	S-5	6 8 11 12		BROWN TO GRAY CLAY, TR TO SM SILT, TR F/C SAND		
10			13.5			
	S-6	9 11 10		TAN AND PINK CLAYEY SILT	36.9	
15			18.5			
	S-7	7 8 13		TAN, BROWN, AND GRAY CLAYEY SILT	39.1	
20			23.5			
	S-8	8 11 9		GRAY CLAYEY SILT	39.0	
25						
	S-9	3 4 4	30.0	END OF BORING AT 30'		
30						
35						

NEWPROJECTS TEST BORING LOG 195651_TDI_CSX.GPJ SITE BLAUVELT.GDT 3/12/13

DRN. TBT
CKD. PWK



LOCATION: CSX RAILROAD ROW, NY

SHEET 1 OF 1

DRILLER	R. CARUSO
HELPER	C. SMART
INSPECTOR	N/A
DATE STARTED	12/01/2012
DATE COMPLETED	12/01/2012

DEPTH	A	B	C	DESCRIPTION	Wn	REMARKS
					6.3	
	S-1	9 9 6 5				
	S-2	4 5 6 6				
5	S-3	4 5 4 7			5.9	
	S-4	4 6 8 7			5.8	
10	S-5	6 10 7 6				
15	S-6	6 6 9				
20	S-7	38 39 12			18.0	
25	S-8	8 10 15			28.0	
30						
35						

NEW PROJECTS TEST BORING LOG 195651_TDI_CSX.GPJ SITE BLAUVELT.GDT 3/12/13

DRN.	TBT
CKD.	PWK



SUMMARY OF LABORATORY TEST DATA

Project Name: TDI Champlain Hudson Power Express – CSX
 Client Name: Transmission Developers, Inc.
 TRC Project #: 195651

SAMPLE IDENTIFICATION			Soil Group (USCS System)	GRAIN SIZE DISTRIBUTION				PLASTICITY				Specific Gravity	Moisture Content (%)	Unit Weight (pcf)	Compressive Strength (tsf)	Organic Content (%)
Boring #	Sample #	Depth (ft)		Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Liquidity Index					
	S-4	6.0-8.0	ML	20.2	25.0	54.8		-	-	-	-	-	19.0	-	-	-
	S-5	8.0-10.0														
	S-6	13.5-15.0	-	0.4	4.0	95.6		-	-	-	-	-	37.1	-	-	-
	S-7	18.5-20.0	-	-	-	-	-	-	-	-	-	-	33.3	91.7	-	-
	S-8	23.5-25.0	-	-	-	-	-	-	-	-	-	-	39.5	-	-	-
B226.1-1	S-1	0.0-2.0	-	-	-	-	-	-	-	-	-	-	3.4	-	-	-
	S-2	2.0-4.0	CL	4.2	13.4	82.4		-	-	-	-	-	37.7	-	-	-
	S-3	4.0-6.0	-	9.4		13.1	77.5	-	-	-	-	2.73	30.8	90.0	-	-
	S-4	6.0-8.0												-		
	S-6	13.5-15.0	CH	-	-	-	-	50	27	23	0.4	-	36.9	86.0	-	-

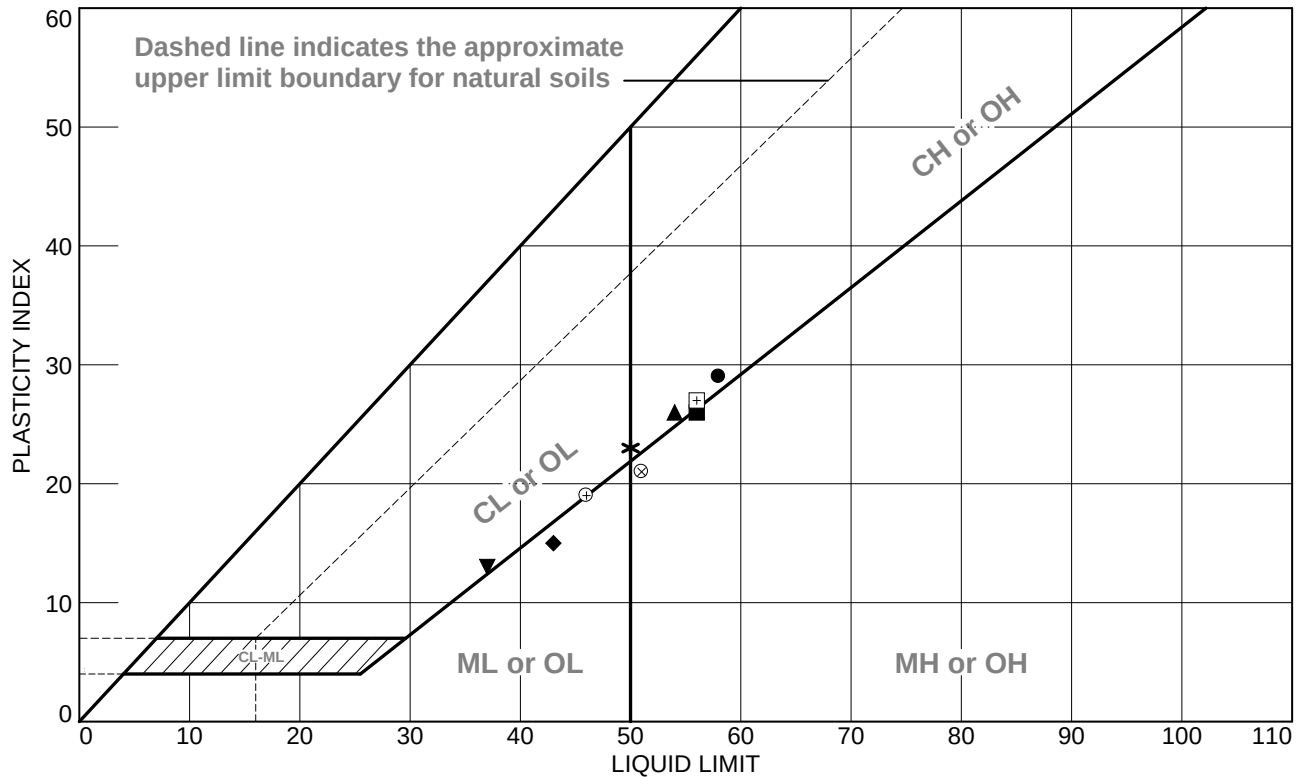


SUMMARY OF LABORATORY TEST DATA

Project Name: TDI Champlain Hudson Power Express – CSX
 Client Name: Transmission Developers, Inc.
 TRC Project #: 195651

SAMPLE IDENTIFICATION			Soil Group (USCS System)	GRAIN SIZE DISTRIBUTION				PLASTICITY				Specific Gravity	Moisture Content (%)	Unit Weight (pcf)	Compressive Strength (tsf)	Organic Content (%)
Boring #	Sample #	Depth (ft)		Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Liquidity Index					
	S-7	18.5-20.0	-	-	-	-	-	-	-	-	-	-	39.1	-	-	-
	S-8	23.5-25.0	CL	-	-	-	-	46	27	19	0.6	-	39.0	84.5	-	-
B226.2-1	S-1	0.0-2.0	-	-	-	-	-	-	-	-	-	-	6.3	-	-	-
	S-3	4.0-6.0	SP-SM	36.2	52.5	11.3		-	-	-	-	-	5.9	-	-	-
	S-4	6.0-8.0														
	S-5	8.0-10.0	-	-	-	-	-	-	-	-	-	-	5.8	-	-	-
	S-7	18.5-20.0	-	-	-	-	-	-	-	-	-	-	18.0	-	-	-
	S-8	23.5-25.0	-	-	-	-	-	-	-	-	-	-	28.0	94.9	-	-
B226.4-1	S-2	2.0-4.0	-	-	-	-	-	-	-	-	-	-	48.5	-	-	-
	S-4	6.0-8.0	-	-	-	-	-	-	-	-	-	-	32.3	-	-	-
	S-5	8.0-10.9	-	-	-	-	-	-	-	-	-	-	31.9	88.5	-	-

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA

	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	B222.34-1	S-4	6.0-8.0 FT	35.2	29	58	29	CH
■	B222.34-1	S-6	13.5-15.0 FT	34.8	30	56	26	CH/MH
▲	B222.9-1	S-5	8.0-10.0 FT	33.4	28	54	26	CH
◆	B223.4-1	S-7	18.5-20.0 FT	31.6	28	43	15	ML
▼	B224.8-1	S-8 & S-9	23.5-30.0 FT	33.3	24	37	13	CL
*	B226.1-1	S-6	13.5-15.0 FT	36.9	27	50	23	CH
⊕	B226.1-1	S-8	23.5-25.0 FT	39.0	27	46	19	CL
⊞	B226.6-1	S-3 & S-4	4.0-8.0 FT	38.8	29	56	27	CH
⊗	B226.6-1	S-6 & S-7	13.5-20.0 FT	53.7	30	51	21	MH

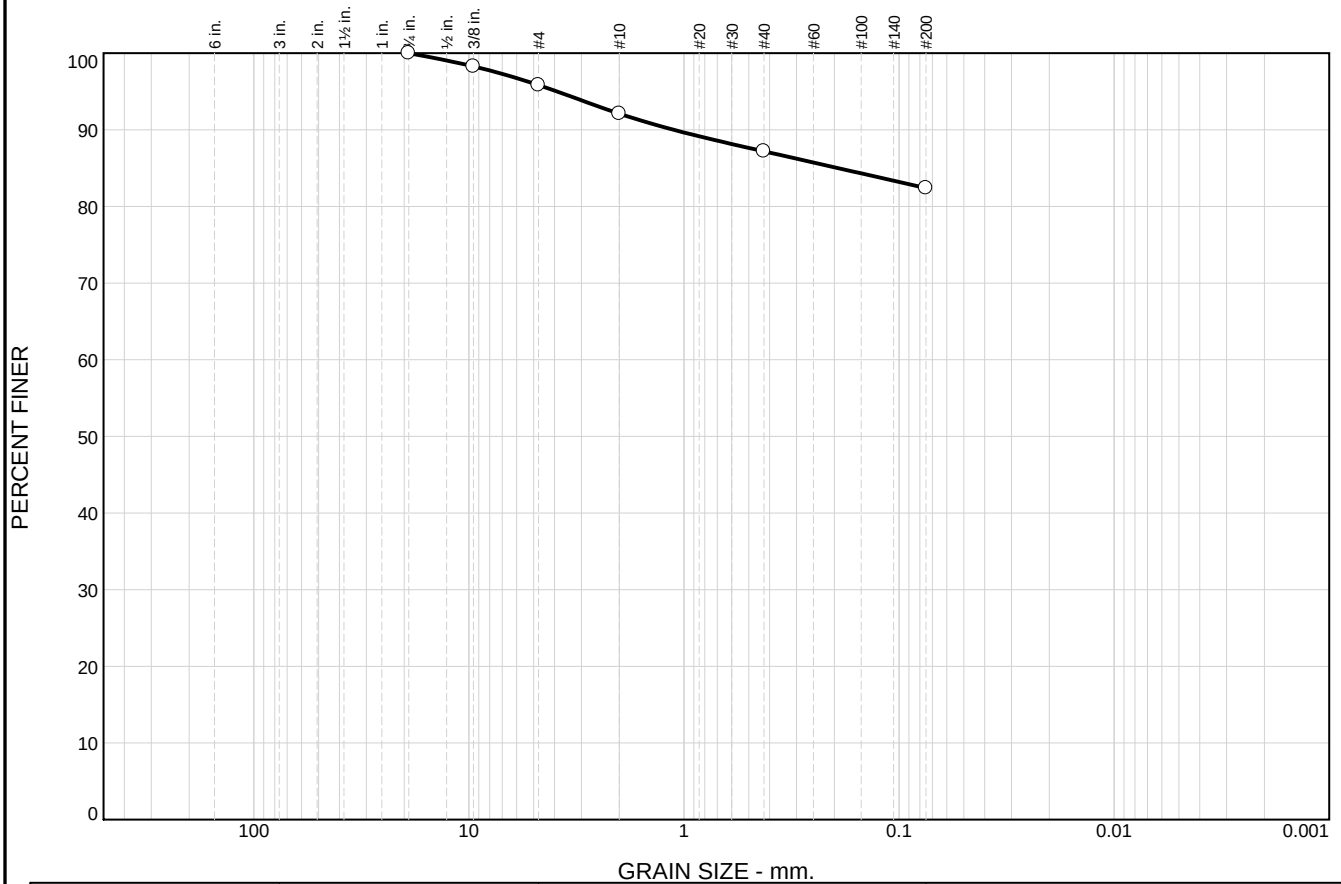
TRC
Engineers, Inc.
Mt. Laurel, NJ

Client: TRANSMISSION DEVELOPERS INC.
Project: TDI CHAMPLAIN HUDSON POWER EXPRESS - CSX

Project No.: 195651

Figure 9

Particle Size Distribution Report

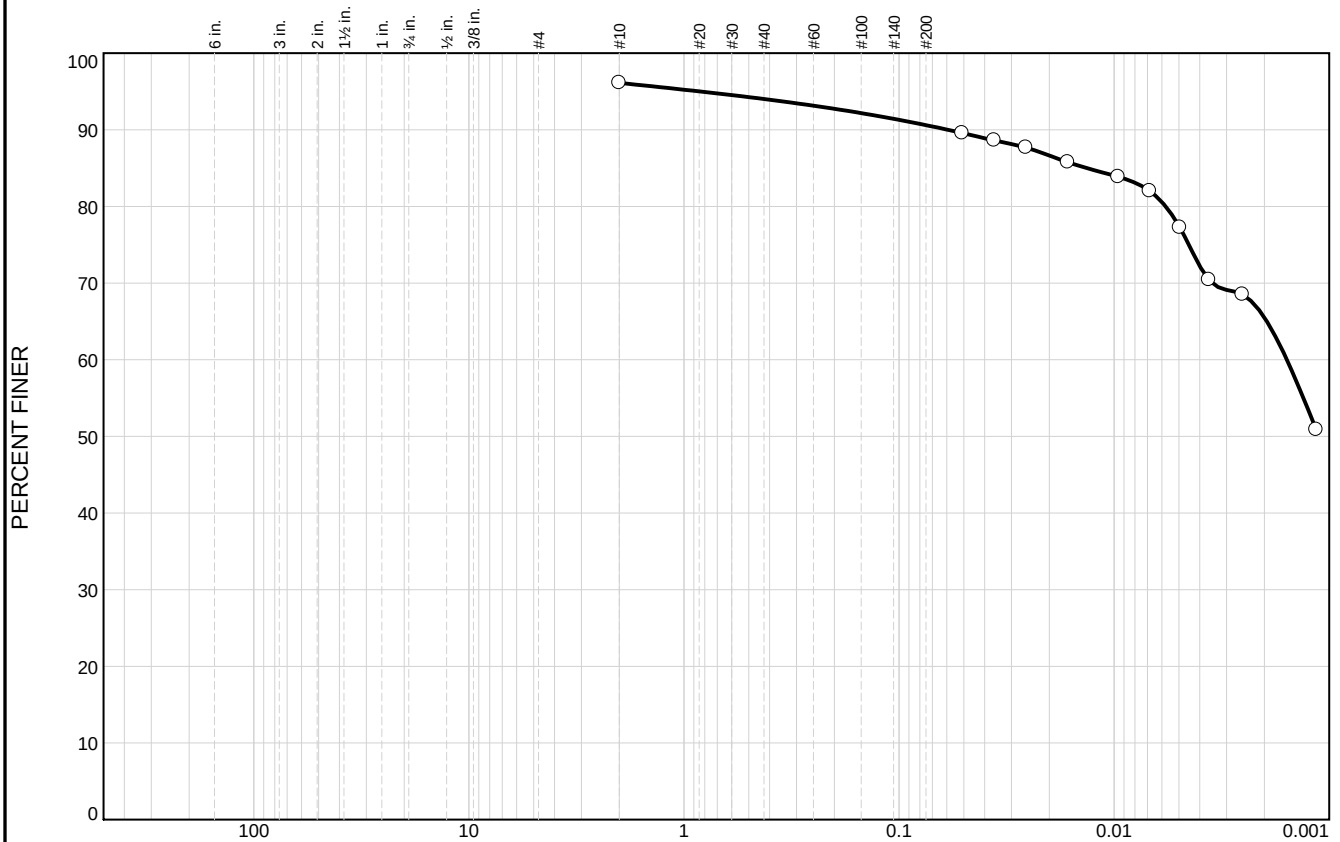


GRAIN SIZE - mm.										
% +3"		% Gravel		% Sand			% Fines			
		Coarse	Fine	Coarse	Medium	Fine	Silt Clay			
☐	0.0	0.0	4.2	3.7	4.9	4.8	82.4			
☐										
☒	LL	PL	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
☐			0.1918							
Material Description								USCS	AASHTO	
○ GRAY CLAY, TR TO SM M/F/C SAND, TR F/ GRAVEL								CL		
Project No. 195651 Client: TRANSMISSION DEVELOPERS INC. Project: TDI CHAMPLAIN HUDSON POWER EXPRESS - CSX ☐ Source of Sample: B226.1-1 Depth: 2.0-4.0 FT Sample Number: S-2								Remarks: ○SAMPLE DESCRIPTION BASED ON VISUAL IDENTIFICATION AND LABORATORY ANALYSIS		
TRC Engineers, Inc. Mt. Laurel, NJ										

Figure 137

Tested By: TBT 01/10/13 Checked By: JPB 03/12/13

Particle Size Distribution Report



GRAIN SIZE - mm.

	% +3"		% Gravel		% Sand			% Fines	
			Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
☐						2.1	3.4	13.1	77.5
☐	LL	PL	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c
☐			0.0134	0.0016					

Material Description

☐ BROWN TO GRAY CLAY, TR TO SM SILT, TR F/M/C SAND

USCS

AASHTO

Project No. 195651 **Client:** TRANSMISSION DEVELOPERS INC.

Project: TDI CHAMPLAIN HUDSON POWER EXPRESS - CSX

☐ **Source of Sample:** B226.1-1 **Depth:** 4.0-8.0 FT **Sample Number:** S-3 & S-4

TRC Engineers, Inc.

Mt. Laurel, NJ

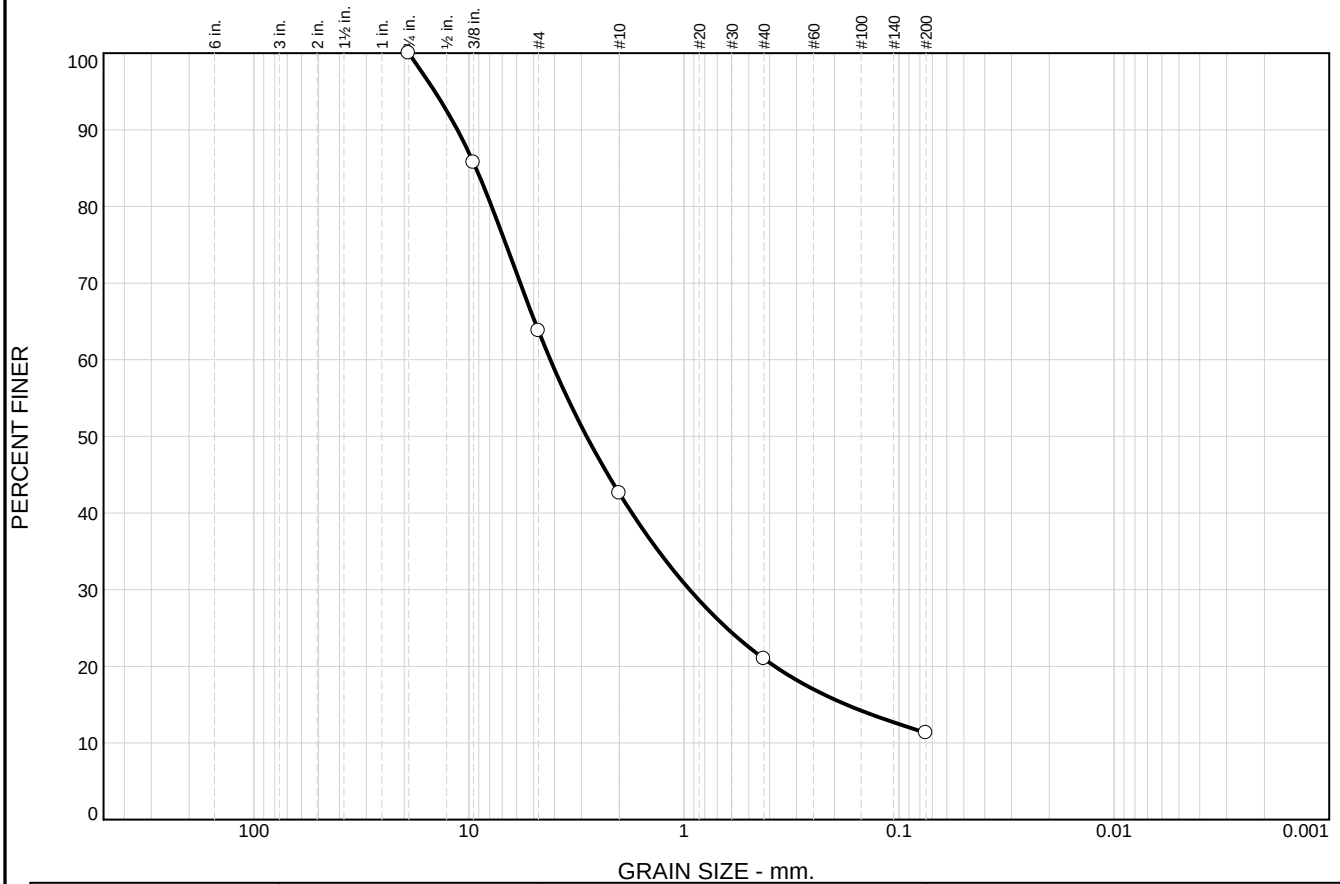
Remarks:

☐ SAMPLE DESCRIPTION
BASED ON VISUAL
IDENTIFICATION AND
LABORATORY ANALYSIS

Figure 138

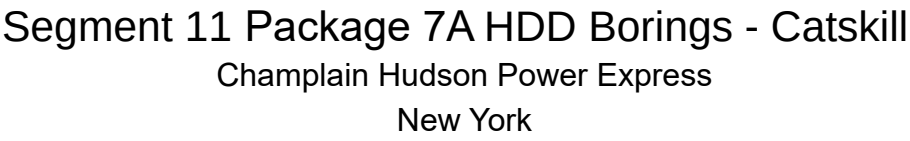
Tested By: TBT 01/08/13 **Checked By:** JPB 03/12/13

Particle Size Distribution Report



GRAIN SIZE - mm.										
% +3"		% Gravel		% Sand			% Fines			
		Coarse	Fine	Coarse	Medium	Fine	Silt		Clay	
○	0.0	0.0	36.2	21.2	21.6	9.7	11.3			
×	LL	PL	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
○			9.2769	4.1829	2.8353	0.9414	0.1758			
Material Description								USCS		AASHTO
○ GRAY TO DARK GRAY F/ GRAVELLY M/C/F SAND, TR TO SM SILT, TR ASPHALT (FILL)								SP-SM		
Project No. 195651 Client: TRANSMISSION DEVELOPERS INC. Project: TDI CHAMPLAIN HUDSON POWER EXPRESS - CSX ○ Source of Sample: B226.2-1 Depth: 4.0-8.0 FT Sample Number: S-3 & S-4								Remarks: ○SAMPLE DESCRIPTION BASED ON VISUAL IDENTIFICATION AND LABORATORY ANALYSIS		
TRC Engineers, Inc.										
Mt. Laurel, NJ										
								Figure 139		

Tested By: TBT 01/10/13 Checked By: JPB 03/12/13



CREATED BY	Kiewit
DATE	05/09/2022

- Kiewit Borings (2022)
- Borings by Others





Kiewit

EXPLORATORY BORING LOG

Champlain Hudson Power Express
New York

BORING NO: K-226.2A

PROJECT NUMBER 20001480
START DATE 03/10/2022
FINISH DATE 03/10/2022

LOGGED BY Rafael Salas Jr
DRILLER/RIG Corey B. / Diedrich D-90
DRILL CONTRACTOR Parratt Wolff

COORDINATES N 1214427.62
E 650320.80
GROUND ELEV. 108.9 ft
HAMMER TYPE/EFF. Manual - Safety

Depth (ft)	Elevation (ft)	Graphic Log	Material Description	Sample Type	Core Run No.	Recovery %	RQD	Pocket Pen. (tsf)	Blow Counts (N Value)	Notes	Legend
											▲ SPT N Value ● MC (%) — PL & LL (%) ☒ Fines Content (%)
	108.4		6 inches gravel railroad FILL, subangular to angular, gray, dry			34%			5-7-9-6 (16)	Boring advanced with 3.5" ID HSA	
			CLAY (CL), brown with gray seams, stiff, dry			46%			4-6-6-10 (12)		
5			With coarse subangular gravel, moist			25%			4-7-8-7 (15)		
			Dark grayish brown			66%			5-10-12-13 (22)		
						66%			3-2-6-6 (8)		
10	98.9		CLAY (CH), olive brown to light brown with gray seams, stiff, moist								
			Rock stuck in shoe			100%			4-6-8-10 (14)		
15						100%			4-6-7-10 (13)		
20						100%			3-5-8-9 (13)		
25											
30						100%		1.5	6-7-10-12	3-inch ring sampler	



Kiewit

EXPLORATORY BORING LOG

Champlain Hudson Power Express
New York

BORING NO: K-226.2A

PROJECT NUMBER 20001480
START DATE 03/10/2022
FINISH DATE 03/10/2022

LOGGED BY Rafael Salas Jr
DRILLER/RIG Corey B. / Diedrich D-90
DRILL CONTRACTOR Parratt Wolff

COORDINATES N 1214427.62
E 650320.80
GROUND ELEV. 108.9 ft
HAMMER TYPE/EFF. Manual - Safety

Depth (ft)	Elevation (ft)	Graphic Log	Material Description	Sample Type	Core Run No.	Recovery % RQD	Pocket Pen. (tsf)	Blow Counts (N Value)	Notes	Legend			
										▲ SPT N Value	● MC (%)	— PL & LL (%)	☒ Fines Content (%)
			Gray with light brown seams, firm										
35	73.9		LIMESTONE, with healed calcite filled fractures, limited fracturing with little to no weathering on joints			100%		1-4-4-6 (8)	Refusal at 35 ft., switched to NX rock coring tools Unconfined Compressive Strength = 10,300 psi	▲			
40	68.9		Boring terminated at 40 ft			93% 85							
45													
50													
55													
60													



Kiewit

EXPLORATORY BORING LOG

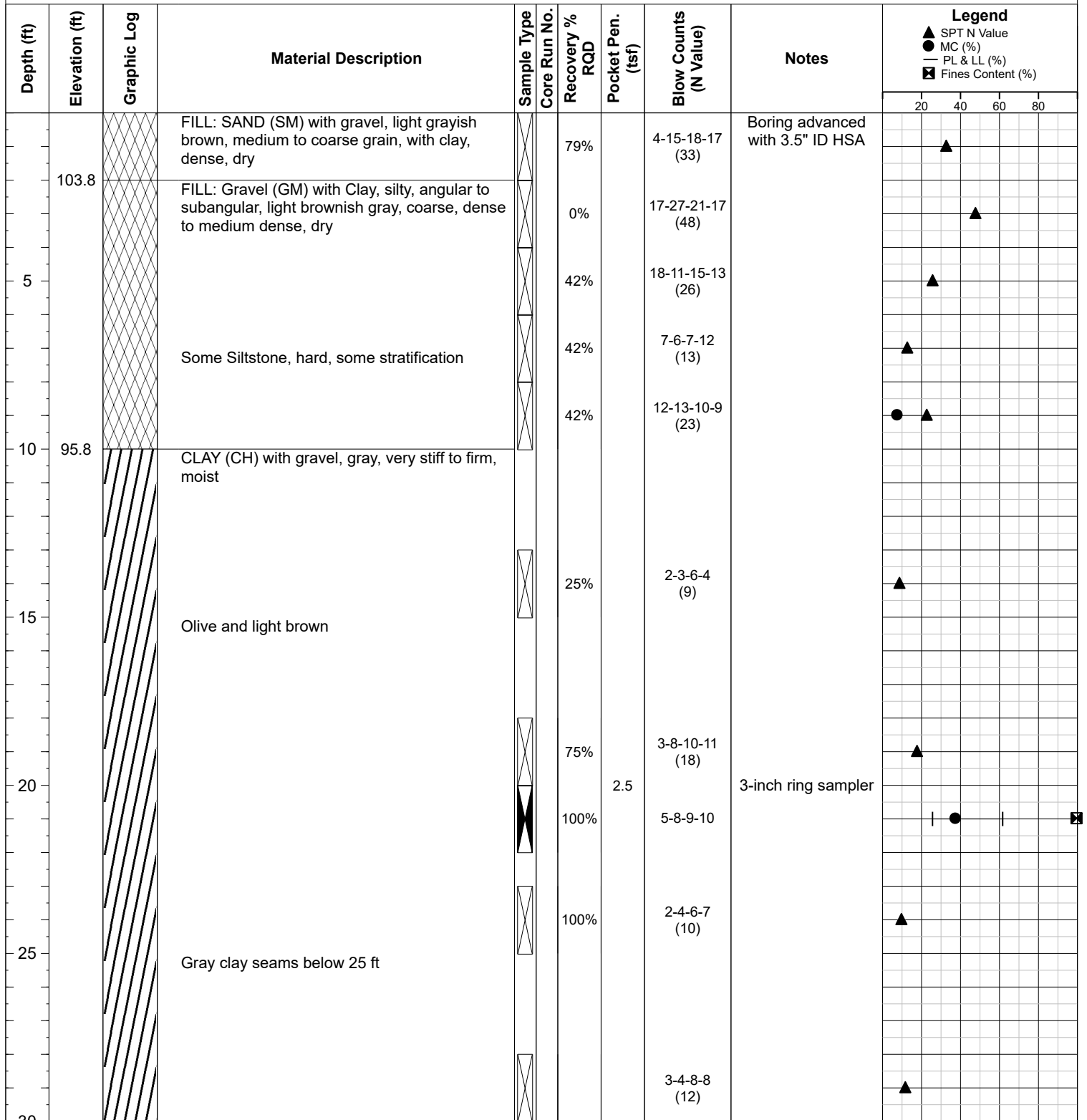
Champlain Hudson Power Express
New York

BORING NO: K-226.2B

PROJECT NUMBER 20001480
START DATE 03/09/2022
FINISH DATE 03/09/2022

LOGGED BY Rafael Salas Jr
DRILLER/RIG Corey B. / Diedrich D-90
DRILL CONTRACTOR Parratt Wolff

COORDINATES N 1214187.35
E 650265.97
GROUND ELEV. 105.8 ft
HAMMER TYPE/EFF. Manual - Safety





Kiewit

EXPLORATORY BORING LOG

Champlain Hudson Power Express
New York

BORING NO: K-226.2B

PROJECT NUMBER 20001480
START DATE 03/09/2022
FINISH DATE 03/09/2022

LOGGED BY Rafael Salas Jr
DRILLER/RIG Corey B. / Diedrich D-90
DRILL CONTRACTOR Parratt Wolff

COORDINATES N 1214187.35
E 650265.97
GROUND ELEV. 105.8 ft
HAMMER TYPE/EFF. Manual - Safety

Depth (ft)	Elevation (ft)	Graphic Log	Material Description	Sample Type	Core Run No.	Recovery % RQD	Pocket Pen. (tsf)	Blow Counts (N Value)	Notes	Legend			
										▲	●	—	■
										SPT N Value	MC (%)	PL & LL (%)	Fines Content (%)
										20	40	60	80
35	70.8		CLAY (CH), gray, soft, moist			100%		3-3-5-7 (8)		▲	●	—	■
40	65.8		Boring terminated at 40 ft			100%		0-0-2-2 (2)		▲			
45													
50													
55													
60													



ATLANTIC TESTING LABORATORIES

WBE certified company

LABORATORY DETERMINATION OF MOISTURE CONTENT OF SOILS

ASTM D 2216

Page 1 of 1

PROJECT INFORMATION

Client: Kiewit Infrastructure Co.
Project: Champlain Hudson Power Express
United Cable Installation
Various Locations, New York

ATL Report No.: CD10279E-08-03-22
Report Date: March 28, 2022
Date Received: March 18, 2022

TEST DATA

Boring No.	Sample No.	Depth (ft)	Moisture Content (%)
K-225.9	S-6	13-15	43.0
	S-9/10	28-30	48.0
K-226.2A	S-4	6-8	36.0
	S-6	13-15	33.8
	S-9/10	28-30	38.1
K-226.2B	S-5 ¹	8-10	7.7
	S-8/9	21-23	37.6
	S-12	33-35	37.8
K-226.7	S-5/6	4-6	34.5
	S-9/10	8-10	39.7
	S-15/16	23-25	55.6
K-226.8	S-7/8	8-10	36.2
	S-13/14	23-25	54.7
K-227.0	S-5/6 ¹	4-6	23.5
	S-9/10	8-10	33.3
	S-15/16	23-25	40.6

Remarks

1. Sample mass was less than the minimum mass outlined in the referenced test method.

Reviewed By:

Date: 03/28/22



ATLANTIC TESTING LABORATORIES

WBE certified company

AMOUNT OF MATERIAL IN SOILS FINER THAN THE NO. 200 SIEVE ASTM D 1140

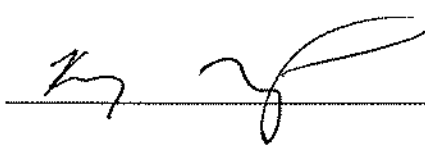
PROJECT INFORMATION

Client: Kiewit Infrastructure Co.
Project: Champlain Hudson Power Express
United Cable Installation
Various Locations, New York

ATL Report No.: CD10279E-08-03-22
Report Date: March 28, 2022
Test Date: March 18, 2022
Performed By: M. White

TEST DATA

Boring No.	Sample No.	Depth (ft)	Method (A or B)	Soak Time (min)	Initial Dry Weight (g)	% Finer than #200
K-225.9	S-6	13-15	A	10	48.43	97.9
K-225.9	S-9/10	28-30	A	10	100.48	99.9
K-226.2A	S-6	13-15	A	10	62.57	98.3
K-226.2A	S-9/10	28-30	A	10	74.20	96.7
K-226.2B	S-8/9	21-23	A	10	95.42	99.9
K-226.2B	S-12	33-35	A	10	144.57	98.3
K-226.7	S-9/10	8-10	A	10	87.63	99.6
K-226.7	S-15/16	23-25	A	10	52.32	99.9
K-226.8	S-7/8	8-10	A	10	92.92	100.0
K-226.8	S-13/14	23-25	A	10	59.61	100.0
K-227.0	S-9/10	8-10	A	10	180.64	54.8
K-227.0	S-15/16	23-25	A	10	87.65	99.8

Reviewed By: 

Date: 03/28/22



ATLANTIC TESTING LABORATORIES

WBE certified company

Page 1 of 2

LIQUID LIMIT, PLASTIC LIMIT, AND PLASTICITY INDEX OF SOIL ASTM D 4318

PROJECT INFORMATION

Client: Kiewit Infrastructure Co.
Project: Champlain Hudson Power Express
United Cable Installation
Various Locations, New York

ATL Report No.: CD10279E-08-03-22
Report Date: March 28, 2022
Date Received: March 18, 2022

TEST DATA

Boring No.	Sample No.	LL	PL	PI
K-225.9	S-6	58	24	34
K-225.9	S-9/10	37	21	16
K-226.2A	S-6	61	25	36
K-226.2A	S-9/10	61	26	35
K-226.2B	S-8/9	62	26	36
K-226.2B	S-12	50	24	26
K-226.7	S-9/10	65	27	38
K-226.7	S-15/16	59	26	33
K-226.8	S-7/8	63	26	37
K-226.8	S-13/14	52	23	29
K-227.0	S-9/10	54	26	28
K-227.0	S-15/16	57	24	33

SAMPLE INFORMATION

Boring No.	Sample No.	Maximum Grain Size (mm)	Estimated Amount of Sample Retained on No. 40 Sieve (%)	As Received Moisture Content (%)
K-225.9	S-6	0.074	0	43.0
K-225.9	S-9/10	0.050	0	48.0
K-226.2A	S-6	0.074	0	33.8
K-226.2A	S-9/10	0.074	0	38.1
K-226.2B	S-8/9	0.050	0	37.6
K-226.2B	S-12	0.074	0	37.8
K-226.7	S-9/10	0.050	0	39.7
K-226.7	S-15/16	0.050	0	55.6
K-226.8	S-7/8	0.050	0	36.2
K-226.8	S-13/14	0.050	0	54.7
K-227.0	S-9/10	4.76	6	33.3
K-227.0	S-15/16	0.050	0	40.6

Client: Kiewit Infrastructure Co.
Project: Champlain Hudson Power Express

ATL Report No. CD10279E-08-03-22

Date: March 28, 2022

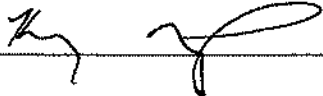
Page 2 of 2

PREPARATION INFORMATION

Boring No.	Sample No.	Preparation	Method of Removing Oversized Material
K-225.9	S-6	Air Dry	Not Necessary
K-225.9	S-9/10	Air Dry	Not Necessary
K-226.2A	S-6	Air Dry	Not Necessary
K-226.2A	S-9/10	Air Dry	Not Necessary
K-226.2B	S-8/9	Air Dry	Not Necessary
K-226.2B	S-12	Air Dry	Not Necessary
K-226.7	S-9/10	Air Dry	Not Necessary
K-226.7	S-15/16	Air Dry	Not Necessary
K-226.8	S-7/8	Air Dry	Not Necessary
K-226.8	S-13/14	Air Dry	Not Necessary
K-227.0	S-9/10	Air Dry	Pulverizing and Screening
K-227.0	S-15/16	Air Dry	Not Necessary

EQUIPMENT INFORMATION

Liquid Limit Procedure:	Multipoint - Method A	☒	Single Point - Method B	☐
Liquid Limit Apparatus:	Manual	☒	Motor Driven	☐
Liquid Limit Grooving Tool Material:	Plastic	☒	Metal	☐
Liquid Limit Grooving Tool Shape:	Flat	☒	Curved (AASHTO Only)	☐
Plastic Limit:	Hand Rolled	☒	Mechanical Rolling Device	☐

Reviewed By: 

Date: 03/28/22



ATLANTIC TESTING LABORATORIES

WBE certified company

Page 1 of 1

PROJECT INFORMATION

Client: Kiewit Infrastructure Co.
Project: Champlain Hudson Power Express
United Cable Installation
Various Locations, New York

ATL Report No.: CD10279E-08-03-22
Report Date: March 28, 2022
Date Received: March 18, 2022

UNCONFINED COMPRESSIVE STRENGTH OF INTACT ROCK CORE SPECIMENS ASTM D 7012, Method C

Boring No.	Sample No.	Depth (ft)	Diameter (in)	Length (in)	Load Rate (lbs/sec)	Total Load (lbs)	Area (in ²)	Compressive Strength (psi)
K-226.2A	RC-1	36.4-36.7	1.96	4.00	370	31,160	3.02	10,300

Failure Pictures

K-226.2A, RC-1, 36.4-36.7'



Reviewed By:

Date: March 28, 2022

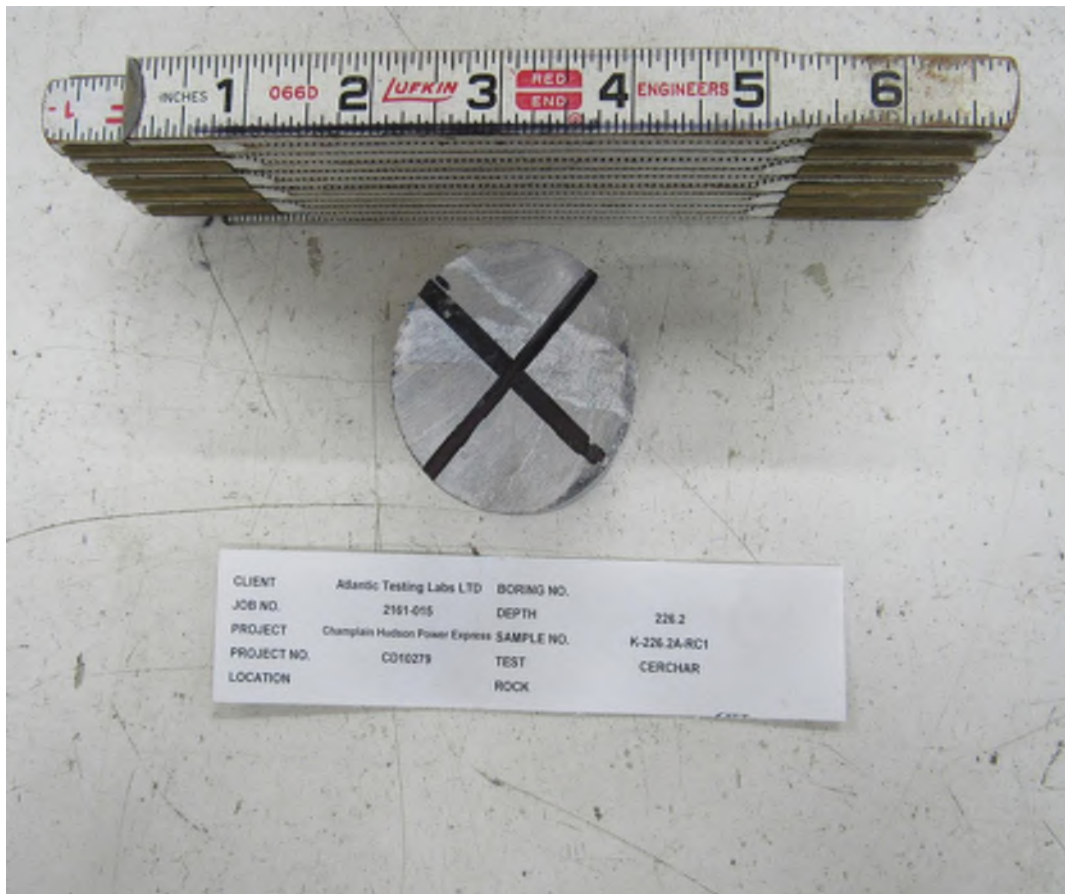
**CERCHAR Abrasiveness
ASTM D7625**

CLIENT	Atlantic Testing Labs LTD	JOB NO.	2161-015
PROJECT	Champlain Hudson Power Express	LOCATION	--
PROJECT NO.	CD10279		
BORING NO. DEPTH SAMPLE NO. DATE SAMPLED DATE TESTED TECHNICIAN ROCK TYPE	226.2 K-226.2A-RC1 04/25/22 HN		
Surface Type: Moisture Condition Reading A.1 (in): Reading A.2 (in): Reading A.3 (in): Reading A.4 (in): Reading A.5 (in): Reading B.1 (in): Reading B.2 (in): Reading B.3 (in): Reading B.4 (in): Reading B.5 (in): Average Reading (in): Average Reading (mm): Uncorrected CAI or CAI _s : Corrected CAI:	Saw Cut As Received 0.00874 0.00535 0.00835 0.00803 0.00843 0.00827 0.00921 0.00662 0.00945 0.00598 0.00784 0.1992 1.99 2.45		
NOTES	CAI _s is the CAI calculated on saw cut specimens. Corrected CAI for saw cut specimens based on R. Plinger and H. Kasling Suggested formula CAI = 0.99*CAI _s + 0.48. Applied pins had a Rockwell Hardness of 54-56. * Sample was broken during the test.		
Data entry by:	HN	Date:	04/26/22
Checked by:	DL	Date:	04/27/22
File name:	2161015_CERCHAR ASTM D7625_0.xlsm		

CHERCHAR Abrasiveness ASTM D7625

CLIENT	Atlantic Testing Labs LTD	BORING NO.	--
JOB NO.	2161-015	DEPTH	226.2
PROJECT	Champlain Hudson Power Express	SAMPLE NO.	K-226.2A-RC1
PROJECT NO.	CD10279	DATE SAMPLED	--
LOCATION	--	DATE TESTED	04/25/22
		TECHNICIAN	HN
		ROCK TYPE	--

Before Picture



NOTES

* Sample was broken during the test.

Picture File: 1.JPG
File name: 2161015__CHERCHAR ASTM D7625_0.xlsm

CHERCHAR Abrasiveness ASTM D7625

CLIENT	Atlantic Testing Labs LTD	BORING NO.	--
JOB NO.	2161-015	DEPTH	226.2
PROJECT	Champlain Hudson Power Express	SAMPLE NO.	K-226.2A-RC1
PROJECT NO.	CD10279	DATE SAMPLED	--
LOCATION	--	DATE TESTED	04/25/22
		TECHNICIAN	HN
		ROCK TYPE	--

After Picture



NOTES

* Sample was broken during the test.

Picture File: 1a.JPG
 File name: 2161015__CHERCHAR ASTM D7625_0.xlsm

Splitting Tensile Strength ASTM D3967

CLIENT	Atlantic Testing Labs LTD	JOB NO.	2161-015
PROJECT	Champlain Hudson Power Express	LOCATION	--
PROJECT NO.	CD10279		
BORING NO.			
DEPTH	226.2		
SAMPLE NO.	K-226.2A-RC1		
DATE SAMPLED			
DATE TESTED	04/19/22		
TECHNICIAN	DL		
ROCK TYPE			
Diameter (in):	1.975		
Height (in):	1.038		
Mass of Wet Rock (g):	135.60		
Wet Density (lbs/ft³):	162.4		
Wet Density (g/cm³):	2.602		
Peak Load (lbs):	2749		
Splitting Tensile Strength (psi):	854		
Splitting Tensile Strength (kPa):	5885		
Failure Type:	Single Plane		
BORING NO.			
DEPTH			
SAMPLE NO.			
DATE SAMPLED			
DATE TESTED			
TECHNICIAN			
ROCK TYPE			
Diameter (in):			
Height (in):			
Mass of Wet Rock (g):			
Wet Density (lbs/ft³):			
Wet Density (g/cm³):			
Peak Load (lbs):			
Splitting Tensile Strength (psi):			
Splitting Tensile Strength (kPa):			
Failure Type:			
NOTES			
Data entry by:	DL	Date:	04/20/22
Checked by:	HN	Date:	04/20/22
File name:	2161015_Brazilian ASTM D3967_0.xlsm		

Splitting Tensile ASTM D3967

CLIENT	Atlantic Testing Labs LTD	BORING NO.	
JOB NO.	2161-015	DEPTH	226.2
PROJECT	Champlain Hudson Power Express	SAMPLE NO.	K-226.2A-RC1
PROJECT NO.	CD10279	DATE SAMPLED	
LOCATION	--	DATE TESTED	04/19/22
		TECHNICIAN	DL
		ROCK TYPE	

Before Picture



NOTES

Picture File: 1.JPG
File name: 2161015__Brazilian ASTM D3967_0.xlsm

Splitting Tensile ASTM D3967

CLIENT	Atlantic Testing Labs LTD	BORING NO.	
JOB NO.	2161-015	DEPTH	226.2
PROJECT	Champlain Hudson Power Express	SAMPLE NO.	K-226.2A-RC1
PROJECT NO.	CD10279	DATE SAMPLED	
LOCATION	--	DATE TESTED	04/19/22
		TECHNICIAN	DL
		ROCK TYPE	

After Picture



NOTES

Picture File: 1a.JPG
File name: 2161015__Brazilian ASTM D3967_0.xlsm



Package 7A Phase 3 Borings
Champlain Hudson Power Express
New York

PROJECT NUMBER 20001480

CREATED BY	Kiewit
DATE	12/08/2022

Legend Key

● Kiewit Borings (Phase 3)





Kiewit

EXPLORATORY BORING LOG

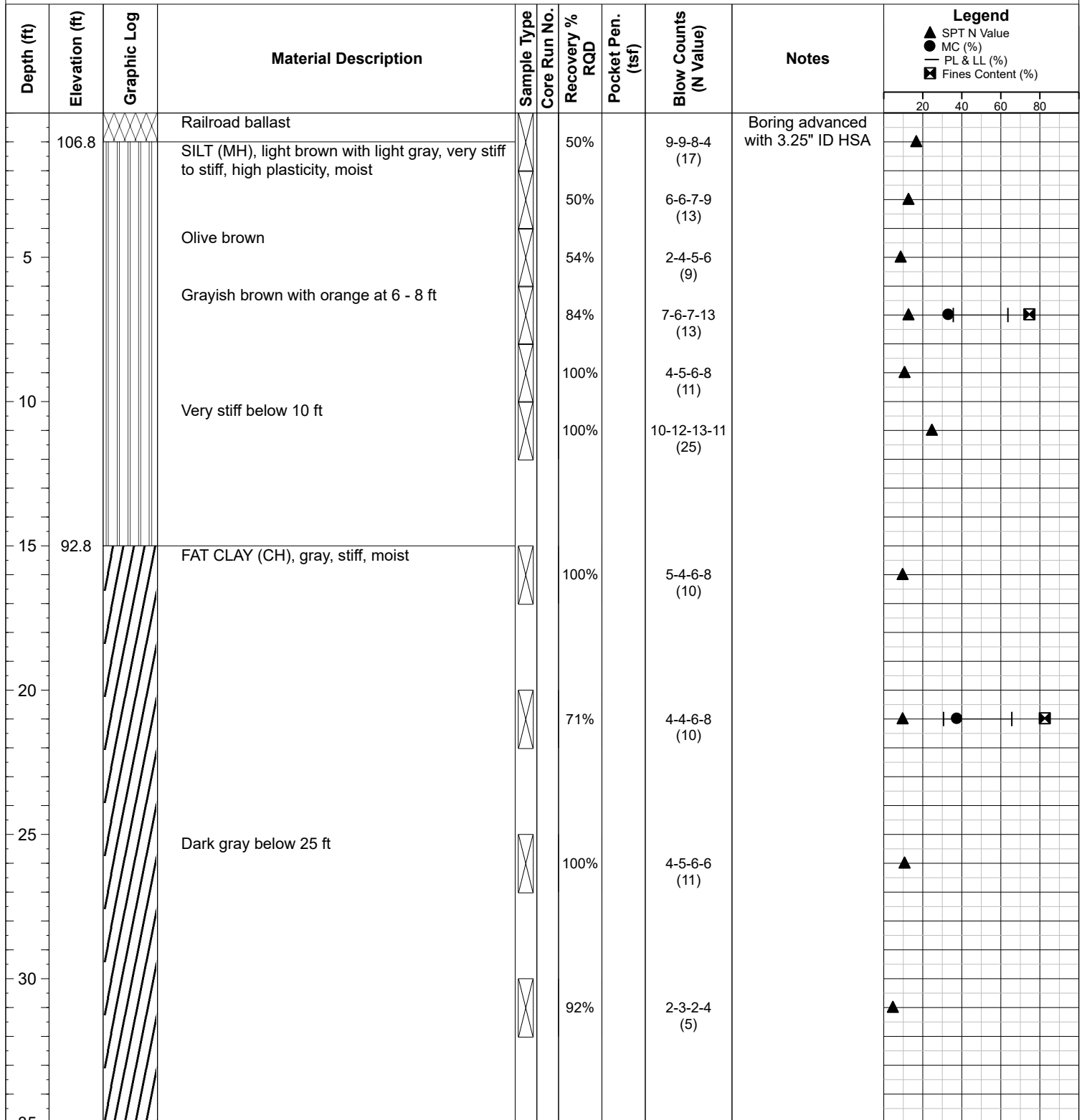
Champlain Hudson Power Express
New York

BORING NO: KB-226.1

PROJECT NUMBER 20001480
START DATE 09/01/2022
FINISH DATE 09/01/2022

LOGGED BY Rafael Salas
DRILLER/RIG C. Brown / CME-850
DRILL CONTRACTOR Parratt Wolff

COORDINATES N 1214648.99
E 650356.50
GROUND ELEV. 107.8 ft
HAMMER TYPE/EFF. Automatic





Kiewit

EXPLORATORY BORING LOG

Champlain Hudson Power Express
New York

BORING NO: KB-226.1

PROJECT NUMBER 20001480
START DATE 09/01/2022
FINISH DATE 09/01/2022

LOGGED BY Rafael Salas
DRILLER/RIG C. Brown / CME-850
DRILL CONTRACTOR Parratt Wolff

COORDINATES N 1214648.99
E 650356.50
GROUND ELEV. 107.8 ft
HAMMER TYPE/EFF. Automatic

Depth (ft)	Elevation (ft)	Graphic Log	Material Description	Sample Type Core Run No.	Recovery % RQD	Pocket Pen. (tsf)	Blow Counts (N Value)	Notes	Legend			
									▲ SPT N Value	● MC (%)	— PL & LL (%)	☒ Fines Content (%)
									20	40	60	80
	70.4				92%		0-0-0-2 (0)					
			Graywacke, dark gray, fine grained, calcite veins throughout, moderately spaced discontinuities, fresh to slightly weathered	1	88% 88							
40			Very closely to moderately spaced discontinuities									
				2	89% 84			UCS = 7384 psi				
45			Interbedded with shale at 45 - 48.3 ft									
			Quartz vein at 46.9 ft	3	100% 90							
50			Interbedded with shale below 50 ft									
				4	99% 95							
55												
				5	100% 100							
60	47.8		Boring Terminated at 60 ft									
65												
70												

KB-226.1 - Runs 1 through 4



KB-226.1 - Run 5



Summary of Laboratory Results

Sheet 2 of 2

BORING ID	Depth (Ft.)	Water Content (%)
KB-222.6A	15-17	1.2
KB-222.6A	35-37	35.8
KB-222.6A	50-52	41.7
KB-222.6A	65-67	38.4
KB-223.1A	6-8	31.3
KB-223.1A	25-27	39.6
KB-223.1A	45-47	22.0
KB-226.1	6-8	33.3
KB-226.1	20-22	37.7
KB-226.8A	4-6	35.5
KB-226.8A	20-22	37.4
KB-226.8A	38-40	46.7

PROJECT: LAB Testing

SITE: Champlain- Hudson Power Express



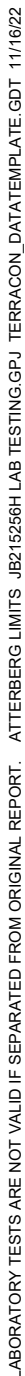
PROJECT NUMBER: JB215256H

CLIENT: Kiewit Engineering (NY) Corp
Lone Tree, CO

EXHIBIT: B-2

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. SMART LAB SUMMARY-PORTRAIT JB215256H LAB TESTING.GPJ TERRACON_DATA\TEMPLATE.GDT 11/16/22

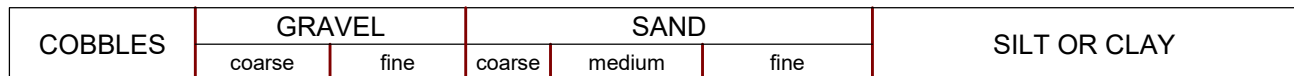
ASTM D4318



LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ATTERBERG LIMITS JB215256H LAB TESTING.GPJ TERRACON_DATATEMPLATE.GDT 11/16/22

EXHIBIT: B-3

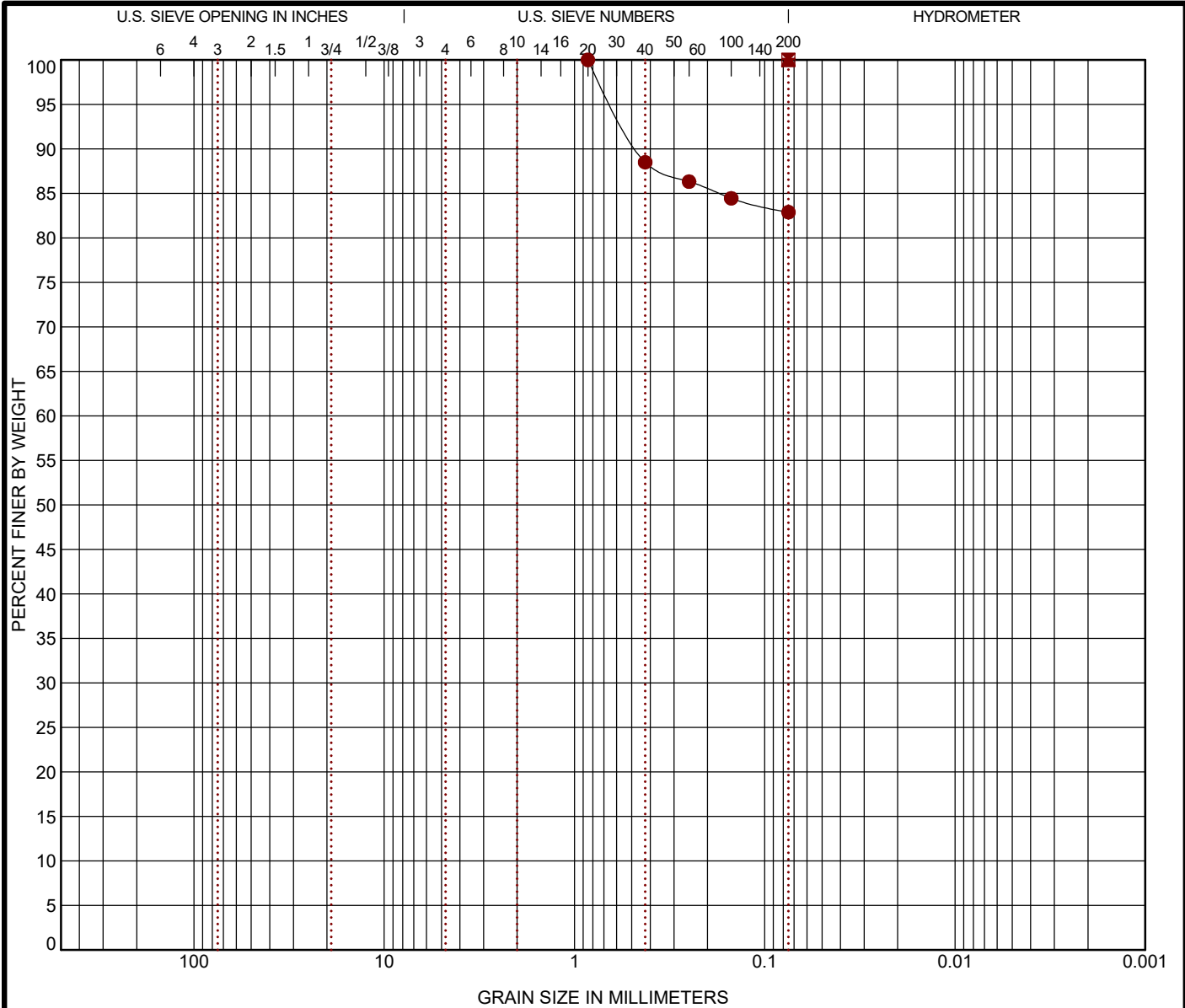
ASTM D422 / ASTM C136



PROJECT: LAB Testing	 30 Corporate Cir Ste 201 Albany, NY	PROJECT NUMBER: JB215256H
SITE: Champlain- Hudson Power Express		CLIENT: Kiewit Engineering (NY) Corp Lone Tree, CO
		EXHIBIT: B-10

GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Boring ID	Depth (Ft)	USCS Classification	WC (%)	LL	PL	PI	Cc	Cu
● KB-226.1	20 - 22	FAT CLAY with SAND (CH)	37.7	66	31	35		
☒ KB-226.8A	4 - 6	ELASTIC SILT (MH)	35.5	62	33	29		
▲ KB-226.8A	20 - 22	FAT CLAY (CH)	37.4	50	27	23		
★ KB-226.8A	38 - 40	ELASTIC SILT (MH)	46.7	50	32	18		

Boring ID	Depth (Ft)	D ₁₀₀	D ₆₀	D ₃₀	D ₁₀	%Cobbles	%Gravel	%Sand	%Silt	%Fines	%Clay
● KB-226.1	20 - 22	0.85				0.0	0.0	17.1		82.9	
☒ KB-226.8A	4 - 6	0.075				0.0	0.0	0.0		100.0	
▲ KB-226.8A	20 - 22	0.075				0.0	0.0	0.0		100.0	
★ KB-226.8A	38 - 40	0.075				0.0	0.0	0.0		100.0	

PROJECT: LAB Testing

SITE: Champlain- Hudson Power Express

Terracon
30 Corporate Cir Ste 201
Albany, NY

PROJECT NUMBER: JB215256H

CLIENT: Kiewit Engineering (NY) Corp
Lone Tree, CO

EXHIBIT: B-11

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS-2 JB215256H LAB TESTING.GPJ TERRACON_DATATEMPLATE.GDT 11/16/22