



GEODesign, Inc.
85 Granite Shed Lane, Unit #1
Montpelier, VT 05602
(802) 674-2033

MEMORANDUM

TO: Callie Ewald, P.E.
Geotechnical Engineering Manager
Vermont Agency of Transportation
2178 Airport Road, Unit B
Berlin, VT 05641

Email: callie.ewald@Vermont.gov

FROM: GEODesign, Inc.
(Grace Benzi, EIT / Jacob Wimett, P.E.)

DATE: March 6, 2026

RE: Supplemental Memorandum - Subsurface Explorations
Plainfield ER P24-2(610)
US Route 2
Plainfield, VT

FILE NO.: 0750-015.03

SUMMARY

GEODesign provided a report for this project on May 21, 2024 (referred to as “our Report” herein) in which we provided the results of subsurface explorations, a stability analysis, ongoing monitoring results, and recommendations to stabilize the slope.

On July 11, 2024 (following issuance of our Report) a significant flooding event led to the loss of an additional 30’ of embankment at the toe of the slope. This resulted in a less stable configuration which caused further loss of crest geometry and put US Route 2 at risk. The inclinometer placed in boring B-102(IN) and the observation well placed in boring B-103(OW) were lost as a result of the progressive slope failure that occurred following the July 2024 flood event. Additionally, the inclinometer in boring B-101(IN) was lost when it was accidentally struck during installation of tiebacks as part of the emergency measures undertaken to stabilize US Route 2 in October of 2024.

The purpose of this memorandum is to summarize the additional subsurface explorations that have been done since the issuance of our Report.

SOIL BORINGS

Three test borings were drilled between February 12 and March 4, 2024 by New England Boring Contractors, Inc. using an ATV mounted drilling rig. These borings included two inclinometers, B-101D(IN) and B-102(IN), and one observation well, B-103(OW). These borings were performed to create an initial subsurface profile for evaluating slope stability, and to establish the aforementioned monitoring points. Boring logs for these explorations were included in our Report.

An additional 5 soil borings (B-104(IN) through B-108) were performed between August 14 and 20, 2024 by New England Boring Contractors, Inc. using a Mobile B-53 drilling rig. These 5 borings were performed to better profile subsurface strata transitions along US Route 2 adjacent to the slope failure, as well as the installation of a new inclinometer to monitor ongoing slope movements in boring B-104(IN), where loss of crest geometry was in closest proximity to US Route 2.

An additional 2 soil borings (B-109(IN) and B-110(IN)) were performed between January 13 and 16, 2025 by Northern Test Boring using a Diedrich D-50 track rig. Both of these borings received an inclinometer, and were performed to:

- Add an upslope monitoring point to capture potential deep seated slope movements that may be starting upslope from US Route 2; and
- Replace the inclinometer previously located in boring B-101D(IN) which was damaged during construction of emergency stabilization measures for US Route 2.

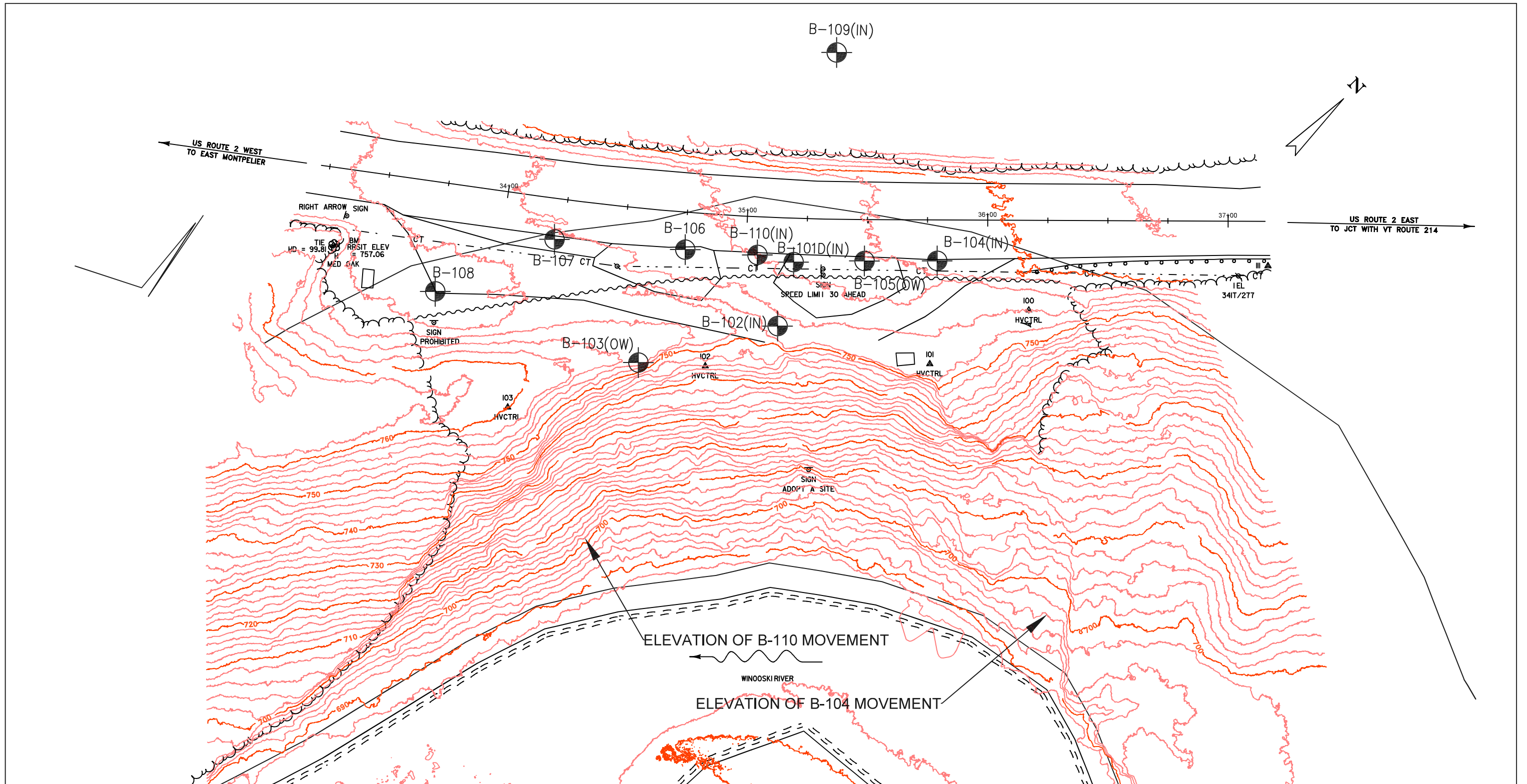
Refer to the attached Exploration Location Plan (Figure 1) and the complete set of boring logs for all of the borings that have been performed for this project.

LIMITATIONS

This memorandum is subject to the limitations included in our Report.

ATTACHMENTS:

- Exploration Location Plan (Figure 1)
- Complete Soil Boring Logs



NOTES:

1. LIDAR CONTOURS SHOWN ARE BASED ON THE FILE "23d034plans_cont 11.19.2024.pdf" TRANSMITTED ELECTRONICALLY IN NOVEMBER 2024
2. DUE TO CONTINUED MOVEMENT OF THE SLOPE, CONTOURS SHOWN DO NOT REPRESENT EXISTING CONDITION.
3. BORING LOCATIONS ARE SHOWN APPROXIMATELY BASED ON TAPED MEASUREMENTS TO EXISTING FEATURES.

LEGEND

B-1 TEST BORING NO. AND LOCATION BY GEODESIGN

SLOPE STABILITY SECTION ID AND LOCATION

GEO DESIGN

85 GRANITE SHED LANE
MONTPELIER, VT 05602
802.674.2033
geocompanies.com

DRAWN BY: GAB REVIEWED BY: JFW

**EXPLORATION LOCATION PLAN
PLAINFIELD US ROUTE 2
PLAINFIELD, VT**

PROJECT NO: 0750-15.3

SCALE IN FEET
1" = 40'

DATE: MARCH 2, 2026

FIGURE NO. 1



STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION AND MATERIALS
BUREAU CENTRAL LABORATORY

BORING LOG

Plainfield ER P24-2 (610)
0750-12.29

Boring No.: B-101A

Page No.: 1 of 1

Pin No.: 24M014

Checked By: JFW

Boring Crew: Garrett McDougal (NEBC), B. Andrews (GEO)

Date Started: 2/12/24 Date Finished: 2/14/24

VTSPG NAD83: _____

Station: 35+09 Offset: 18' R

Ground Elevation: 756.0 ft

Casing Type: FJ Sampler: SS
I.D.: 4 in 1.38 in
Hammer Wt: 140 lb. 140 lb.
Hammer Fall: 30 in. 30 in.
Hammer/Rod Type: Auto/NWJ
Rig: Mobile B-53 ATV C_E = 1.3

Groundwater Observations

Date	Depth (ft)	Notes

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
5	X X X	S1 (0' - 2'): Loose;	7-6-3-4 (9)						
		S1A (Top 2'): gray fine to coarse SAND, little fine Gravel, trace Silt, trace Organics, moist;	3-5-7-6 (12)						
5	X X X	S2B (Bottom 9"): grayish brown clayey SILT, trace fine to medium Sand, trace Organics, moist. Rec. = 0.9 ft	12-9-7-8 (16)						
		S2 (2' - 4'): Medium dense SILT and CLAY, trace fine Sand, trace Roots, moist. With SILT and fine SAND partings. Rec. = 1.6 ft	10-10-8-6 (18)	0.0	46.0	53.9	NP	NP	
10	X X X	S3 (4' - 6'): Medium dense, brown SILT and fine SAND, trace fine Gravel, moist. Rec. = 0.9 ft	6-4-4-3 (8)	0.4	90.6	9.0	NP	NP	
		A-4 S4 (6' - 8'): Medium dense, brown SILT and fine SAND, moist. Rec. = 0.9 ft	4-3-4-4 (7)						
15	X X X	A-3 S5 (8' - 10'): Loose, brownish gray fine to medium SAND, trace Silt, moist. Rec. = 1.0 ft	3-3-4-8 (7)	1.2	84.1	14.7	NP	NP	
		S6 (10' - 12'): Loose, brownish gray fine to medium SAND, trace Silt, moist. Rec. = 0.6 ft	6-5-4-5 (9)	2.4	0.8	96.9	NP	NP	
15	X X X	A-2-4 S7 (12' - 14'): Loose, brownish gray fine to medium SAND, little Silt, moist. Rec. = 0.6 ft	6-6-8-9 (14)	0.6	70.9	28.5	NP	NP	
		A-4 S8 (14' - 16'): Loose, brownish gray SILT, trace fine to coarse Sand, trace fine Gravel, moist. Rec. = 0.8 ft							
20	X X X	A-2-4 S9 (19' - 21'): Medium dense, brownish gray fine to medium SAND, little Silt, moist. Rec. = 0.8 ft	26-25-17-14 (42)						
25	X X X	S10 (24' - 26'): Dense, dark gray fine GRAVEL and SILT, some fine to coarse Sand, moist. Rec. = 0.7 ft	30-30-25/2"- (R)						
30	X X X	S11 (29' - 30.2'): Refusal, gray fine GRAVEL, some fine to coarse Sand, some Silt, moist. Rec. = 0.7 ft Gravel appears weathered.	16-19-17-16 (36)	17.0	46.5	36.5	NP	NP	
35	X X X	A-4 S12 (34' - 36'): Dense, gray fine to coarse SAND and SILT, little fine Gravel, moist. Rec. = 1.1 ft Gravel appears weathered.							
Hole stopped @ 37.0 ft									
40		Remarks: 1) Borehole advanced with 5" casing to 10' deep, then 5" removed and replaced with 4" casing at 10' deep. 2) Rig chatter during roller bit advance from 23' to 24' deep. 3) Wash water return lost during advance from clearing 24' to 29' deep. 4) Encountered inferred boulder from 30.4' to 32.7' deep based on difficult, smooth advance of roller bit. Wash water return gray with mica sheen on wash tub. 5) Unable to advance casing below boulder inferred at 36' deep. Advanced roller bit below 36' and attempted to drive 4" casing without success. Attempted to drive 5" casing around the 4" casing, but became locked together. Abandon the borehole due to unable to advance casing. 6) B-101B attempted offset approximately 6' east. Attempt to drive 5" casing to below 37' deep (termination depth of B-101A) but unable to advance 5" casing below obstruction at 24' deep. Attempted to advance 5" roller bit to 29' deep, but borehole would not stay open. Hole abandoned and offset 10' further east to (B-101C). 7) Hammer energy is assumed.							
45									

GEODESIGN BORING LOG 750-12.29 BORINGS.GPJ VERMONT AOT.GDT 3/9/26

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_E is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.



STATE OF VERMONT
 AGENCY OF TRANSPORTATION
 CONSTRUCTION AND MATERIALS
 BUREAU CENTRAL LABORATORY

BORING LOG

**Plainfield ER P24-2 (610)
 0750-12.29**

Boring No.: B-101C

Page No.: 1 of 1

Pin No.: 24M014

Checked By: JFW

Boring Crew: Garrett McDougal (NEBC), B. Andrews (GEO)

Date Started: 2/15/24 Date Finished: 2/15/24

VTSPG NAD83: _____

Station: 35+26 Offset: 18' R

Ground Elevation: 756.0 ft

Casing	Sampler
Type: <u>FJ</u>	<u>SS</u>
I.D.: <u>4 in</u>	<u>1.38 in</u>
Hammer Wt: <u>140 lb.</u>	<u>140 lb.</u>
Hammer Fall: <u>30 in.</u>	<u>30 in.</u>
Hammer/Rod Type: <u>Auto/NWJ</u>	
Rig: <u>Mobile B-53 ATV</u>	<u>C_E = 1.3</u>

Groundwater Observations

Date	Depth (ft)	Notes
02/15/24	26.2	Open hole

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
5									
10									
15									
20									
25									
30									
35		A-1-b S1 (32.7' - 34.5"): Refusal, brownish gray fine to coarse SAND and fine to coarse GRAVEL, some Silt, moist. Rec. = 12.0 ft Hole stopped @ 34.5 ft	12-17-21-20/3" (38)		42.2	33.7	24.1	NP	NP
40		Remarks: 1) Borehole advanced using 5" casing, driven to 24' deep. 2) Roller bit advanced ahead of casing, encountering inferred boulders from 24.4' to 25.5' deep; gray rock pieces in wash water return. 3) Inferred boulder encountered at 29.1' deep, roller bit advanced to 29.3' deep. With 5" casing at 24' deep, installed 4" casing to 29.3' deep, then attempted core C-1 at 29.3' deep. 4) Attempted core C-2 at 31.9' deep, but core barrel bound in inferred soil while advancing to 32.7'. No recovery, attempted split spoon sample at 32.7' deep. 5) After sampling at 32.7' deep, removed casing and attempted to advance 5" roller bit to clear hole and allow advance of 4" casing. Unable to continue advance due to caving of open hole. Abandoned borehole and offset about 6' west (B-101D(IN)). 6) Hammer energy is assumed.							
45									

GEODESIGN BORING LOG 750-12.29 BORINGS.GPJ VERMONT AOT.GDT 3/9/26

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BORING LOG

Plainfield ER P24-2 (610)
 0750-12.29

Boring No.: **B-101D(IN)**

Page No.: 1 of 2

Pin No.: 24M014

Checked By: JFW

Boring Crew: Garrett McDougal (NEBC), B. Andrews (GEO)

Date Started: 2/28/24 Date Finished: 3/04/24

VTSPG NAD83: _____

Station: 35+20 Offset: 18' R

Ground Elevation: 756.0 ft

	Casing	Sampler
Type:	FJ	SS
I.D.:	4 in	1.38 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/NWJ	
Rig:	Mobile B-53 ATV	C _E = 1.3

Groundwater Observations		
Date	Depth (ft)	Notes
03/04/24	25.8	In casing.
03/05/24	26.1	Inside inclinometer.

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
5									
10		Slight rig chatter.							
15		Slight rig chatter.							
20									
25		Hard rig chatter with gray wash water return. Inferred nested cobbles/boulders.							
30									
35		Slight rig chatter.							
40		Medium rig chatter.							
40		Hard rig chatter with slow advance.							
40		A-2-4 S1 (40' - 42'): Medium dense, gray with brown fine to coarse SAND and SILT, little fine Gravel, wet. Rec. = 0.5 ft	18-13-10-9 (23)		23.8	45.8	30.4	NP	NP
45		S2 (45' - 45.4'): Refusal, gray fine GRAVEL and fine to coarse SAND, little Silt, moist. Rec. = 0.1 ft	50/5" (R)						

GEODESIGN BORING LOG 750-12.29 BORINGS.GPJ VERMONT AOT.GDT 3/9/26

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BORING LOG

**Plainfield ER P24-2 (610)
 0750-12.29**

Boring No.: **B-101D(IN)**

Page No.: 2 of 2

Pin No.: 24M014

Checked By: JFW

Boring Crew: Garrett McDougal (NEBC), B. Andrews (GEO)
 Date Started: 2/28/24 Date Finished: 3/04/24
 VTSPG NAD83: _____
 Station: 35+20 Offset: 18' R
 Ground Elevation: 756.0 ft

Casing Type: FJ Sampler: SS
 I.D.: 4 in 1.38 in
 Hammer Wt: 140 lb. 140 lb.
 Hammer Fall: 30 in. 30 in.
 Hammer/Rod Type: Auto/NWJ
 Rig: Mobile B-53 ATV C_E = 1.3

Groundwater Observations		
Date	Depth (ft)	Notes
03/04/24	25.8	In casing.
03/05/24	26.1	Inside inclinometer.

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
55		S3 (50' - 52'): Medium dense, gray fine to coarse SAND and fine GRAVEL, little Silt, wet. Rec. = 1.0 ft	16-13-12-19 (25)						
55		S4 (55' - 57'): Very dense, gray fine to coarse SAND and SILT, little fine Gravel, wet. Rec. = 0.2 ft	25-28-59-50/4" (87)						
60		A-4 S5 (60' - 62'): Very dense, gray SILT, trace fine to medium Sand, wet. Rec. = 1.0 ft	12-21-29-30 (50)		0.0	3.8	96.1	NP	NP
65		S6 (65' - 67'): Very dense, gray SILT, wet. Rec. = 1.6 ft	19-35-54-64 (89)						
70		Hole stopped @ 67.0 ft							
75		Remarks: 1) Borehole advanced with 6" casing to 19' deep and cleared with 4" roller bit. Slight rig chatter at 9' and 11' deep. 2) Below 20' deep, 5" casing installed inside the 6" casing and advance continued. Inferred boulder/cobbles encountered from 25' to 27' deep based on hard rig chatter. Gray wash water return. 3) Hard rig chatter at 41' deep and loss of wash water return below. 4) Driller noted inferred material change at about 53' deep based on drilling resistance. 5) Driller noted reduced drilling resistance at ~58' deep on inferred change in strata. Borehole caved in below casing at 56' deep, and 5" casing advanced to 60' deep. 6) Inclinometer casing installed in borehole upon completion. Casing finished with stickup and protective locking steel cover. 7) Hammer energy is assumed.							

GEODESIGN BORING LOG 750-12.29 BORINGS.GPJ VERMONT AOT.GDT 3/9/26

Notes:
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BORING LOG

Plainfield ER P24-2 (610)
0750-12.29

Boring No.: **B-102(IN)**

Page No.: 1 of 3

Pin No.: 24M014

Checked By: JFW

Boring Crew: Garrett McDougal (NEBC), B. Andrews (GEO)

Date Started: 2/15/24 Date Finished: 2/21/24

VTSPG NAD83:

Station: 35+13 Offset: 45' R

Ground Elevation: 754.0 ft

Casing: FJ Sampler: SS
Type: FJ I.D.: 4 in 1.38 in
Hammer Wt: 140 lb. 140 lb.
Hammer Fall: 30 in. 30 in.
Hammer/Rod Type: Auto/NWJ
Rig: Mobile B-53 ATV $C_E = 1.3$

Groundwater Observations

Date	Depth (ft)	Notes
03/04/24	47.8	Inside inclinometer.
03/05/24	45.2	Inside inclinometer.

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
5		S1 (0' - 2'): Medium dense, light brown clayey SILT, trace fine Sand, trace Roots, moist. Rec. = 1.7 ft	9-7-5-5 (12)						
		A-4 S2 (2' - 4'): Medium dense, light brown clayey SILT, trace fine Sand, trace Roots, moist. Rec. = 1.7 ft	3-4-6-6 (10)		1.5	98.5	NP	NP	
		S3 (4' - 6'): Loose, light brown SILT, trace fine Sand, moist. Rec. = 1.8 ft	1-3-3-2 (6)						
		A-4 S4 (6' - 8'): Loose, light brown SILT, trace fine to medium Sand, moist. Rec. = 1.5 ft	3-5-4-4 (9)		0.1	99.9	NP	NP	
		S5 (8' - 10'): Loose, light brown SILT, little fine Sand, moist. Rec. = 1.8 ft Trace roots inferred from open hole above.	4-3-5-5 (8)						
15		S6 (15' - 17'): Medium dense, grayish brown SILT, trace fine Sand, very moist. Rec. = 1.6 ft	4-9-11-11 (20)						
20		A-4 S7 (20' - 22'): Medium dense, brown fine SAND and SILT, trace fine Gravel, moist. Rec. = 1.0 ft	11-8-9-8 (17)		1.9	55.0	43.1	NP	NP
25		S8 (25' - 27'): Medium dense, brown fine to medium SAND, some Silt, trace fine Gravel, moist. Rec. = 0.8 ft	11-13-15-14 (28)						
30		S9 (30' - 31.3'): Refusal, brown and gray fine to coarse SAND, some fine Gravel, little Silt, moist. Rec. = 0.7 ft	38-20-50/4" (R)						
35		S10 (35' - 37'): Very dense, dark gray with brown fine to coarse GRAVEL, little fine to coarse Sand, trace Silt, moist. Rec. = 0.8 ft	24-37-40-29 (77)						
40		A-4 S11 (40' - 42'): Refusal, brown and gray fine to coarse SAND and SILT, trace fine Gravel, moist. Rec. = 0.9 ft	24-40-50/3" (R)		10.8	42.9	46.3	NP	NP
45		S12 (45' - 47'): Very dense, gray fine to coarse SAND and SILT, moist. Rec. = 1.3 ft	60-40-42-53 (82)						

GEODESIGN BORING LOG 750-12.29 BORINGS.GPJ VERMONT AOT.GDT 3/9/26

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 BUREAU CENTRAL LABORATORY

BORING LOG

**Plainfield ER P24-2 (610)
 0750-12.29**

Boring No.: **B-102(IN)**

Page No.: 2 of 3

Pin No.: 24M014

Checked By: JFW

Boring Crew: Garrett McDougal (NEBC), B. Andrews (GEO)
 Date Started: 2/15/24 Date Finished: 2/21/24
 VTSPG NAD83: _____
 Station: 35+13 Offset: 45' R
 Ground Elevation: 754.0 ft

Casing: FJ Sampler: SS
 Type: _____
 I.D.: 4 in 1.38 in
 Hammer Wt: 140 lb. 140 lb.
 Hammer Fall: 30 in. 30 in.
 Hammer/Rod Type: Auto/NWJ
 Rig: Mobile B-53 ATV C_E = 1.3

Groundwater Observations		
Date	Depth (ft)	Notes
03/04/24	47.8	Inside inclinometer.
03/05/24	45.2	Inside inclinometer.

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
		S13 (50' - 52') Refusal, gray fine to coarse GRAVEL, little fine to coarse SAND, trace Silt, moist. Rec. = 0.2 ft	50/4" (R)						
55		A-4 S14 (55' - 57') Very dense, gray SILT, trace fine Sand, moist. Rec. = 1.4 ft With coarse Sand from above.	32-35-49-53 (84)		0.2	5.0	94.8	NP	NP
60		S15 (60' - 62') Very dense, gray SILT with Clayey SILT partings, moist. Rec. = 1.4 ft	23-35-43-55 (78)						
65		S16 (65' - 67') Very dense, gray SILT with Clayey SILT partings, moist. Rec. = 1.8 ft	20-30-44-52 (74)					24	NP
70		A-4 S17 (80' - 82') Very dense, gray SILT, trace fine Sand, moist. Rec. = 1.6 ft	18-25-27-38 (52)			0.3	99.7	NP	NP
75		S18 (75' - 77') Very dense, gray SILT, moist. Rec. = 1.5 ft	21-23-34-42 (57)						
80		A-4 S19 (80' - 82') Medium dense, gray SILT, trace fine to medium Sand, wet. Rec. = 1.0 ft	9-10-12-20 (22)		0.0	2.1	97.9	NP	NP
85		S20 (85' - 87') Medium dense, gray Clayey SILT, wet. Rec. = 1.5 ft	6-9-18-19 (27)						
90		S21 (90' - 92') Dense, gray Clayey SILT, wet. Rec. = 2.0 ft	11-17-22-29 (39)					42	16
95		S22 (95' - 97') Dense, gray Clayey SILT, wet. Rec. = 2.0 ft	15-20-22-26 (42)						

GEODESIGN BORING LOG 750-12.29 BORINGS.GPJ - VERMONT AOT.GDT. 3/9/26

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STATE OF VERMONT
 AGENCY OF TRANSPORTATION
 CONSTRUCTION AND MATERIALS
 BUREAU CENTRAL LABORATORY

BORING LOG

Plainfield ER P24-2 (610)
0750-12.29

Boring No.: **B-102(IN)**

Page No.: 3 of 3

Pin No.: 24M014

Checked By: JFW

Boring Crew: Garrett McDougal (NEBC), B. Andrews (GEO)
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 VTSPG NAD83: _____
 Station: 35+13 Offset: 45' R
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	Casing	Sampler
Type:	FJ	SS
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Groundwater Observations		
Date	Depth (ft)	Notes
03/04/24	47.8	Inside inclinometer.
03/05/24	45.2	Inside inclinometer.

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
		S23 (100' - 102') Dense, gray Clayey SILT, wet. Rec. = 2.0 ft	17-20-21-31 (41)						
		Hole stopped @ 102.0 ft							
105		Remarks: 1) Borehole advanced using 4" casing. 2) Encountered hard rig chatter at 29.3' deep, with black rock chips in wash water return. Hard rig chatter encountered at 31.4' deep. 3) Encountered inferred cobbles or boulders from 31.2'-35' deep and again 41.4'-45' deep. 4) Casing driving resistance decreased at 78' deep. 5) Inclinometer casing installed in borehole upon completion. Casing finished with stickup and protective locking steel cover. 6) Hammer energy is assumed.							
110									
115									
120									
125									
130									
135									
140									
145									

GEODESIGN BORING LOG 750-12.29 BORINGS.GPJ VERMONT AOT.GDT. 3/9/26

Notes:
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STATE OF VERMONT
 AGENCY OF TRANSPORTATION
 CONSTRUCTION AND MATERIALS
 BUREAU CENTRAL LABORATORY

BORING LOG

Plainfield ER P24-2 (610)
 0750-12.29

Boring No.: **B-103(OW)**

Page No.: 1 of 2

Pin No.: 24M014

Checked By: JFW

Boring Crew: Garrett McDougal (NEBC), B. Andrews (GEO)

Date Started: 2/22/24 Date Finished: 2/28/24

VTSPG NAD83: _____

Station: 34+55 Offset: 64' R

Ground Elevation: 756.0 ft

Casing: FJ Sampler: SS
 Type: _____
 I.D.: 4 in 1.38 in
 Hammer Wt: 140 lb. 140 lb.
 Hammer Fall: 30 in. 30 in.
 Hammer/Rod Type: Auto/NWJ
 Rig: Mobile B-53 ATV C_E = 1.3

Groundwater Observations

Date	Depth (ft)	Notes
03/04/24	44.6	(In 77' well)
04/12/24	44.3	(In 77' well)

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Well Diagram	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
5	XXX	S1 (0' - 2') Medium dense, gray Clayey SILT and fine to medium SAND, trace fine Gravel, trace Roots, moist. Rec. = 1.7 ft		16-9-4-5 (13)		0.0	0.8	99.2	NP	NP
	XXX	S2 (2' - 4') Medium dense, gray laminated SILT and CLAY, trace Roots, moist. Rec. = 1.8 ft		4-5-8-9 (13)						
	XXX	S3 (4' - 6') Loose, light brown Clayey SILT, trace fine Sand, moist. Rec. = 1.7 ft		2-3-3-5 (6)						
10		A-4 S4 (6' - 8') Medium dense, light brown SILT, trace fine to medium Sand, moist. Rec. = 1.4 ft		4-5-6-8 (11)		0.2	1.3	98.6	NP	NP
		S5 (8' - 10') Medium dense, light brown SILT, trace fine Sand, moist. Rec. = 1.6 ft		6-6-5-6 (11)						
		S6 (10' - 12') Medium dense, light brown SILT, trace fine Sand, moist. Rec. = 1.3 ft		6-8-6-6 (14)						
		S7 (12' - 14') Medium dense, light brown SILT, trace fine Sand, wet. Rec. = 1.1 ft		3-4-6-6 (10)						
15		S8 (15' - 17') Medium dense, light brown Clayey SILT, wet. Rec. = 1.1 ft		4-5-5-6 (10)		0.8	66.4	32.8	NP	NP
20		A-4 S9 (20' - 22') Medium dense, light brown laminated Clayey SILT, trace fine to medium Sand, wet. Rec. = 1.3 ft		4-4-6-7 (10)						
		S10 (25' - 27') Medium dense, brown SILT, little fine Sand, moist. Rec. = 1.1 ft		6-8-9-11 (17)						
30		A-2-4 S11 (30' - 32'): Medium dense, brown fine SAND, some Silt, trace fine Gravel, wet. Rec. = 1.3 ft		7-9-10-10 (19)		12.2	28.7	59.1	NP	NP
35		S12 (35' - 37'): Medium dense, brown fine to coarse SAND, little Silt, little fine Gravel (bottom 2"), wet. Rec. = 0.9 ft		11-9-14-21 (23)						
40		S13 (40' - 40.9'): Refusal, brown/gray/black fine to coarse SAND and SILT, little fine Gravel, wet. Rec. = 0.6 ft Inferred weathered boulder/cobble		40-50/5" (R)						
45		A-4 S14 (45' - 47'): Very dense, brown SILT, some fine to medium Sand, trace fine Gravel, wet. Rec. = 1.7 ft		40-48-52-48 (100)						

GEODESIGN BORING LOG 750-12.29 BORINGS.GPJ VERMONT AOT.GDT. 3/9/26

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STATE OF VERMONT
 AGENCY OF TRANSPORTATION
 CONSTRUCTION AND MATERIALS
 BUREAU CENTRAL LABORATORY

BORING LOG

Plainfield ER P24-2 (610)
 0750-12.29

Boring No.: **B-103(OW)**

Page No.: 2 of 2

Pin No.: 24M014

Checked By: JFW

Boring Crew: Garrett McDougal (NEBC), B. Andrews (GEO)

Date Started: 2/22/24 Date Finished: 2/28/24

VTSPG NAD83: _____

Station: 34+55 Offset: 64' R

Ground Elevation: 756.0 ft

Type:	Casing	Sampler
I.D.:	FJ	SS
Hammer Wt:	4 in	1.38 in
Hammer Fall:	140 lb.	140 lb.
Hammer/Rod Type:	30 in.	30 in.
Rig:	Auto/NWJ	
	Mobile B-53 ATV	C _E = 1.3

Groundwater Observations

Date	Depth (ft)	Notes
03/04/24	44.6	(In 77' well)
04/12/24	44.3	(In 77' well)

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Well Diagram	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
50.9		S15 (50' - 50.9'): Refusal, gray fine to coarse SAND and fine GRAVEL, little Silt, wet. Rec. = 0.7 ft		30-50/5" (R)						
55.3		S16 (55' - 55.3"): Refusal, gray SILT and fine GRAVEL, little fine to coarse Sand, wet. Rec. = 0.3 ft		50/4" (R)						
60.3		S17 (60' - 60.3'): Refusal, gray SILT and fine to coarse SAND, moist. Rec. = 0.2 ft		50/4" (R)						
67.0		S18 (65' - 67'): Very dense, gray SILT with Silty Clay laminations, trace fine Sand, moist. Rec. = 1.4 ft		17-23-38-43 (61)						
72.0		A-4 S19 (70' - 72'): Very dense, gray SILT with Silty Clay and fine Sand laminations, moist. Rec. = 1.7 ft		18-25-36-47 (61)		0.1	2.3	97.6	NP	NP
77.0		S20 (75' - 77'): Very dense, gray SILT with Silty Clay laminations, moist. Rec. = 1.4 ft		18-27-40-48 (67)						
77.0		Hole stopped @ 77.0 ft								
80		Remarks: 1) Borehole advanced using 4" casing. 2) Encountered slight rig chatter at 38' deep. 3) Encountered very hard resistance/chatter at 42.2' deep. 4) Medium rig chatter from 56.5' to 60' deep. 5) Two groundwater monitoring wells (1" I.D.) installed in borehole upon completion. Wells screened from 77' to 67' deep and 30' to 20' deep, isolated by a bentonite seal. Casing finished with stickup and protective locking steel cover. Additional well reading. 6) Hammer energy is assumed.								

GEODESIGN BORING LOG 750-12.29 BORINGS.GPJ VERMONT AOT.GDT. 3/9/26

Notes:

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STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION AND MATERIALS
BUREAU CENTRAL LABORATORY

BORING LOG

Plainfield ER P24-2 (610)
0750-12.29

Boring No.: **B-104(IN)**

Page No.: 1 of 2

Pin No.: 24M014

Checked By: JFW

Boring Crew: Sam Cooley (NEBC), Alan Baribault (GEO)

Date Started: 8/14/24 Date Finished: 8/15/24

VTSPG NAD83:

Station: 35+78 Offset: 17' R

Ground Elevation: 758.0 ft

Casing: FJ Sampler: SS
Type: FJ I.D.: 1.38 in
Hammer Wt: 140 lb. 140 lb.
Hammer Fall: 30 in. 30 in.
Hammer/Rod Type: Auto
Rig: Mobile B-53 ATV $C_E = 1.3$

Groundwater Observations

Date	Depth (ft)	Notes
08/14/24	24.0	Wet Sample

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
5		S1 (1'-3'): Loose;	6-5-3-3 (8)						
		S1A (upper 11"): brownish-gray fine to coarse SAND, little fine to coarse Gravel, trace Silt, wet; S1B (lower 4"): gray and olive-gray layered SILT, trace fine Sand, moist. Rec. = 1.3 ft	2-4-3-5 (7)	8.1	38.3	53.6	NP	NP	
10		A-4 S2 (4'-6'): Loose, brownish gray with brown and orange staining fine to coarse SAND and SILT, moist. Rec. = 1.1 ft							
		S3 (9'-11'): Loose, light brown with dark brown and orange layers fine SAND, with 2" layer SILT, moist. Rec. = 0.8 ft	4-5-5-8 (10)						
15		A-4 S4 (14'-16'): Medium dense, brown SILT and fine SAND, trace coarse Gravel, damp. With a 3" layer fine to medium SAND, trace Silt in spoon tip. Rec. = 0.8 ft	8-11-8-11 (19)	6.2	45.6	48.2	NP	NP	
		S5 (19'-21'): Dense, light to dark brown fine to coarse SAND, some Silt, some coarse Gravel (friable), moist. Rec. = 1.2 ft	26-21-19-18 (40)						
25		S6 (24'-26'): Very dense, olive gray SILT and fine SAND, wet. With 3" layer at top and bottom fine to coarse SAND, some Silt, some fine to coarse Gravel, wet. Rec. = 1.3 ft	28-29-28-40 (57)						
		A-4 S7 (29'-31'): Very dense, brown to gray-brown with occasional orange SILT and fine to medium SAND, some fine to coarse Gravel (friable), moist. Rec. = 1.3 ft	31-35-39-46 (74)	20.6	38.1	41.3	NP	NP	
35		S8 (34'-35.2'): Refusal, gray SILT, some fine Sand, trace fine Gravel, damp. Rec. = 1.2 ft	33-48-100/2" (R)						
		S9 (39'-41'): Very dense, dark gray SILT and CLAY, trace coarse Gravel, wet. With 1" layer of white coarse GRAVEL, damp. With 5" layer of fine to coarse SAND, some Silt, light brown, wet. Rec. = 1.6 ft	31-53-48-43 (101)						
45		A-1-b S10 (44'-44.9'): Refusal, brown-gray fine to coarse SAND and fine to coarse GRAVEL, some Silt, damp. Rec. = 0.7 ft	72-100/4.5" (R)	42.0	34.1	23.8	NP	NP	
		S11 (49'-51'): Very dense, dark gray SILT, little fine Sand, damp-moist. Rec.	21-34-						

GEODESIGN BORING LOG 750-12.29 BORINGS.GPJ VERMONT AOT.GDT. 3/9/26

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STATE OF VERMONT
 AGENCY OF TRANSPORTATION
 CONSTRUCTION AND MATERIALS
 BUREAU CENTRAL LABORATORY

BORING LOG

**Plainfield ER P24-2 (610)
 0750-12.29**

Boring No.: **B-104(IN)**

Page No.: 2 of 2

Pin No.: 24M014

Checked By: JFW

Boring Crew: Sam Cooley (NEBC), Alan Baribault (GEO)
 Date Started: 8/14/24 Date Finished: 8/15/24
 VTSPG NAD83: _____
 Station: 35+78 Offset: 17' R
 Ground Elevation: 758.0 ft

Casing: FJ Sampler: SS
 Type: _____ I.D.: 1.38 in
 Hammer Wt: 140 lb. 140 lb.
 Hammer Fall: 30 in. 30 in.
 Hammer/Rod Type: Auto
 Rig: Mobile B-53 ATV C_E = 1.3

Groundwater Observations

Date	Depth (ft)	Notes
08/14/24	24.0	Wet Sample

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
		= 1.5 ft	47-45 (81)						
55		S12 (54'-56'): Dense, gray SILT, trace fine Sand, moist. Rec. = 1.8 ft	18-22-27-38 (49)						
60		A-4 S13 (59'-61'): Medium dense, gray SILT, trace fine Sand, moist. With 2 layers 1" thick SILT, some fine Sand, wet. Rec. = 1.7 ft	9-13-14-15 (27)		0.1	0.4	99.5	NP	NP
65		S14 (64'-66'): Very dense, dark gray SILT and fine SAND, wet. With 5" at bottom SILT to Clayey SILT, wet. Rec. = 1.8 ft	22-45-68-63 (113)						
70		S15 (69'-71'): Very dense; S15A (upper 4"): gray CLAY and SILT, moist. S15B (lower 16"): gray SILT, moist. Rec. = 1.7 ft	20-36-49-71 (85)						
75		Hole stopped @ 71.0 ft							
80		Remarks: 1) Advanced roller bit through asphalt before sampling. 2) Wash water return brown. Slight grinding on inferred gravel in upper ~4', occasional slight grinding below to 19', inferred cobble at 19' based on chatter of roller bit. 3) Advanced 6" FJ casing to 29', then sample at 57'. Drove 6" casing to 30', flush with ground. Installed 5" casing inside 6" casing and continued to advance. 4) Borehole advanced below 34' deep by advancing roller bit ahead of casing, sampling, then driving casing to that same depth. 5) Casing driven to 50.5' at end of day 8/14. Casing broke at 10' below grade. On 8/15, removed lost 4" casing below broken section with retriever and re-installed to 50.5' before advancing borehole. 6) Hammer energy is assumed.							
85									
90									
95									

GEODESIGN BORING LOG 750-12.29 BORINGS.GPJ VERMONT AOT.GDT 3/9/26

Notes:
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STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION AND MATERIALS
BUREAU CENTRAL LABORATORY

BORING LOG

Plainfield ER P24-2 (610)
0750-12.29

Boring No.: **B-105(OW)**

Page No.: 1 of 1

Pin No.: 24M014

Checked By: JFW

Boring Crew: Sam Cooley (NEBC), Alan Baribault (GEO)

Date Started: 8/15/24 Date Finished: 8/16/24

VTSPG NAD83:

Station: 35+50 Offset: 17' R

Ground Elevation: 758.0 ft

Casing: FJ Sampler: SS
Type: FJ I.D.: 1.38 in
Hammer Wt: 140 lb. 140 lb.
Hammer Fall: 30 in. 30 in.
Hammer/Rod Type: Auto
Rig: Mobile B-53 ATV $C_E = 1.3$

Groundwater Observations

Date	Depth (ft)	Notes
08/19/24	29.3	In well.
09/06/24	29.1	In well.

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Well Diagram	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
0-2	X X X	S1 (0'-2'): Medium dense, brown fine to coarse SAND, some Silt, some fine to coarse Gravel, damp. Spoon tip with light brown SILT and fine SAND, moist. Rec. = 1.7 ft		5-7-5-4 (12)				
2-6	X X X	S2 (4'-6'): Medium dense, light brown fine to medium SAND and SILT, trace fine Gravel, moist. With 3" layer at bottom fine to medium SAND, some Silt, moist. Rec. = 1.7 ft		7-7-5-7 (12)				
6-9	X X X	S3 (9'-11'): Loose, light brown fine to medium SAND, some Silt, damp. Rec. = 0.8 ft		3-3-4-5 (7)				
9-14	X X X	S4 (14'-16'): Loose, light brown fine to medium SAND, some Silt, damp. Rec. = 0.8 ft		2-3-3-5 (6)				
14-19	X X X	S5 (19'-21'): Medium dense, light brown (with lighter and darker layers) fine to medium SAND, some Silt, damp. Rec. = 0.8 ft		8-6-7-7 (13)				
19-24	X X X	S6 (24'-26'): S6A (upper 6"): brown fine to coarse SAND, some Silt, moist. With 2" layer at bottom SILT and fine to coarse SAND, damp. Rec. = 0.9 ft S6B (lower 5"): dark gray to black with light brown to orange staining fine to coarse GRAVEL, some Silt, some fine to coarse Sand, damp.		8-16-28-28 (44)				
24-29	X X X	S7 (29'-31'): Very dense, brown with orange and gray layers, fine to coarse SAND and fine to coarse GRAVEL, some Silt, moist. Rec. = 1.3 ft		21-26-33-29 (59)				
29-34	X X X	S8 (34'-34.4'): Refusal, grayish brown with orange and white SILT and fine to coarse SAND, some fine to coarse Gravel, wet. Rec. = 0.4 ft		100/5"--- (R)				
34-41	X X X	S9 (39'-41'): Dense; S9A (upper 15"): brown gray orange fine to coarse SAND, some Silt, little fine to coarse Gravel (friable), moist. S9B (lower 5"): light brown SILT and CLAY, moist. Rec. = 1.3 ft		20-22-20-24 (42)				
		Hole stopped @ 41.0 ft						
		Remarks: 1) Return water brown. 2) Rock shavings in return water 28'-29'. 3) Rig chatter 37'-39', black rock shavings in return water. 4) Casing broke at the bottom at 31'. Sample advanced to 39'-41' through the broken casing. 5) Well was set through the broken casing to about 38'. 6) Hammer energy is assumed.						

GEODESIGN BORING LOG 750-12.29 BORINGS.GPJ VERMONT AOT.GDT. 3/9/26

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STATE OF VERMONT
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BORING LOG

Plainfield ER P24-2 (610)
 0750-12.29

Boring No.: B-106

Page No.: 1 of 2

Pin No.: 24M014

Checked By: JFW

Boring Crew: Sam Cooley (NEBC), Grace Benzi (GEO)

Date Started: 8/16/24 Date Finished: 8/19/24

VTSPG NAD83: _____

Station: 34+75 Offset: 16' R

Ground Elevation: 755.0 ft

Casing: FJ Sampler: SS
 Type: _____ I.D.: 1.38 in
 Hammer Wt: 140 lb. 140 lb.
 Hammer Fall: 30 in. 30 in.
 Hammer/Rod Type: Auto
 Rig: Mobile B-53 ATV C_E = 1.3

Groundwater Observations

Date	Depth (ft)	Notes

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %					
5		S1 (0'-2'): Medium dense, brown fine to coarse SAND and fine GRAVEL, some Silt, trace Organics, damp Rec. = 1.5 ft	8-8-9-5 (17)											
		S2 (2'-4'): Loose olive gray SILT and fine SAND, damp. With 1" layer dark gray SILT and fine to coarse SAND, damp. With 5" layer at bottom reddish brown fine to coarse SAND, some Silt, damp. Rec. = 1.7 ft	4-6-5-3 (11)											
		S3 (4'-6'): Loose light brown SILT and fine to coarse SAND, damp. With 2" at top reddish brown fine to coarse SAND, some Silt, damp. Rec. = 1.8 ft	5-5-4-5 (9)											
		S4 (6'-8'): Loose, gray-brown with laminations of red and black CLAY and SILT, wet. Rec. = 2.0 ft	4-5-5-6 (10)											
10		A-4 S5 (9'-11'): Medium dense, reddish brown SILT and fine SAND, damp. With laminations of Clayey SILT, damp. Top 2" gray brown CLAY and SILT, wet. Bottom 5" reddish brown fine to coarse SAND, little Silt, moist. Rec. = 1.3 ft	13-6-6-5 (12)							0.4	31.9	67.8	NP	NP
15		S6 (14'-16'): Medium dense; S6A (upper 7"): reddish brown SILT and fine to medium SAND, damp. S6B (lower 4"): light gray fine to medium SAND, little Silt, damp. Rec. = 0.9 ft	6-6-5-6 (11)											
20		S7 (19'-21'): Medium dense reddish brown SILT, and fine to medium SAND, damp. With lower 3" light gray fine to coarse SAND, little Silt, damp. Rec. = 0.9 ft	5-6-6-6 (12)											
25		A-2-4 S8 (24'-26'): Loose light to dark brown fine to coarse SAND, some Silt, moist. Rec. = 0.8 ft	8-5-4-7 (9)							0.0	83.7	16.3	NP	NP
30		S9 (29'-31'): Medium dense brown and gray fine to coarse SAND and SILT, little fine Gravel, moist. Rec. = 0.8 ft	13-8-7-7 (15)											
35		S10 (34'-36'): Dense, light brown with orange fine to coarse SAND, some fine to coarse Gravel, little Silt, wet. With 6" layer at bottom gray SILT and fine to coarse SAND, moist. Rec. = 1.1 ft	15-17-15-16 (32)											
40		S11 (39'-41'): Dense gray-brown fine to coarse SAND, some fine Gravel, some Silt, wet. Rec. = 0.4 ft	20-24-20-26 (44)											
45		S12 (44'-46'): Very dense, gray Clayey SILT, some fine to coarse Gravel, trace fine to coarse Sand, moist. With layers of brown fine to medium SAND, moist. Rec. = 0.5 ft	31-74-65-66 (139)											
		S13 (49'-51'): Very dense, gray Clayey SILT, little fine Sand (laminations),	17-28-											

GEODESIGN BORING LOG 750-12.29 BORINGS.GPJ VERMONT AOT.GDT 3/9/26

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STATE OF VERMONT
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 CONSTRUCTION AND MATERIALS
 BUREAU CENTRAL LABORATORY

BORING LOG

Plainfield ER P24-2 (610)
0750-12.29

Boring No.: B-106

Page No.: 2 of 2

Pin No.: 24M014

Checked By: JFW

Boring Crew: Sam Cooley (NEBC), Grace Benzi (GEO)
 Date Started: 8/16/24 Date Finished: 8/19/24
 VTSPG NAD83: _____
 Station: 34+75 Offset: 16' R
 Ground Elevation: 755.0 ft

Casing: FJ Sampler: SS
 Type: _____ I.D.: 1.38 in
 Hammer Wt: 140 lb. Hammer Fall: 30 in.
 Hammer/Rod Type: Auto
 Rig: Mobile B-53 ATV $C_E = 1.3$

Groundwater Observations

Date	Depth (ft)	Notes

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
		moist. Rec. = 1.8 ft	47-69 (75)						
		Hole stopped @ 51.0 ft							
55		Remarks: 1) Sample S10 initially had no recovery, spoon was advanced 36'-38' to recover a sample (57 hammer blows total). 2) Hammer energy is assumed.							
60									
65									
70									
75									
80									
85									
90									
95									

GEODESIGN BORING LOG 750-12.29 BORINGS.GPJ VERMONT AOT.GDT. 3/9/26

Notes:
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STATE OF VERMONT
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 CONSTRUCTION AND MATERIALS
 BUREAU CENTRAL LABORATORY

BORING LOG

Plainfield ER P24-2 (610)
0750-12.29

Boring No.: B-107
 Page No.: 1 of 1
 Pin No.: 24M014
 Checked By: JFW

Boring Crew: Sam Cooley (NEBC), Grace Benzi (GEO)
 Date Started: 8/19/24 Date Finished: 8/19/24
 VTSPG NAD83: _____
 Station: 34+22 Offset: 17' R
 Ground Elevation: 754.0 ft

Casing: _____ Sampler: _____
 Type: FJ SS
 I.D.: _____ 1.38 in
 Hammer Wt: 140 lb. 140 lb.
 Hammer Fall: 30 in. 30 in.
 Hammer/Rod Type: Auto
 Rig: Mobile B-53 ATV C_E = 1.3

Groundwater Observations

Date	Depth (ft)	Notes

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6' (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
5	× × ×	S1 (0'-2'): Medium dense, brown fine to coarse SAND and fine GRAVEL, some Silt, damp. Rec. = 1.3 ft	11-9-11-7 (20)				
	× × ×	S2 (2'-4'): Medium dense, brown SILT and fine to coarse SAND, trace fine Gravel, damp. Rec. = 1.9 ft	7-6-6-6 (12)				
	× × ×	S3 (4'-6'): Loose, brown fine to coarse SAND, some SILT, moist. Rec. = 1.2 ft	5-3-3-3 (6)				
10	× × ×	S4 (6'-8'): Loose; S4A (upper 5"): dark brown fine to coarse SAND, some Silt, trace fine Gravel, trace Organics, moist. Rec. = 1.6 ft	2-2-3-4 (5)				
	× × ×	S4B (lower 14"): light brown, Clayey SILT and fine to medium SAND, trace fine Gravel, damp.					
	× × ×	S5 (9'-11'): Loose, brown fine to coarse SAND and SILT, trace fine Gravel, moist. Rec. = 1.6 ft	3-3-4-4 (7)				
15		S6 (14'-16'): Loose, brown fine to coarse SAND, trace Silt, moist. Rec. = 0.7 ft	2-2-3-3 (5)				
20		S7 (19'-21'): Very loose, dark brown fine to coarse SAND, trace Silt, trace Gravel, moist. Rec. = 0.3 ft	4-2-2-2 (4)				
25		S8 (24'-26'): Loose, light to dark brown fine to coarse SAND, some Silt, trace fine Gravel, damp. Rec. = 0.9 ft	3-3-2-2 (5)				
30		S9 (29'-31'): Loose, brown with gray orange and red inclusions fine to coarse SAND and SILT, moist. Rec. = 0.3 ft	5-3-2-2 (5)				
35		S10 (34'-36'): Very dense, gray SILT, moist. Rec. = 1.9 ft	34-47-34-41 (81)				
40		S11 (39'-41'): Dense, gray SILT, moist. Rec. = 1.8 ft	13-15-22-27 (37)				
45		S12 (44'-46'): Dense, gray SILT, wet. Rec. = 1.8 ft	14-15-27-39 (42)				
		Hole stopped @ 46.0 ft					
		Remarks: 1) Total casing used 45'. 2) Hammer energy is assumed.					

GEODESIGN BORING LOG 750-12.29 BORINGS.GPJ VERMONT AOT.GDT. 3/9/26

Notes:
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STATE OF VERMONT
 AGENCY OF TRANSPORTATION
 CONSTRUCTION AND MATERIALS
 BUREAU CENTRAL LABORATORY

BORING LOG

**Plainfield ER P24-2 (610)
 0750-12.29**

Boring No.: B-108
 Page No.: 1 of 2
 Pin No.: 24M014
 Checked By: JFW

Boring Crew: Sam Cooley (NEBC), Grace Benzi (GEO)
 Date Started: 8/20/24 Date Finished: 8/20/24
 VTSPG NAD83: _____
 Station: 33+75 Offset: 45' R
 Ground Elevation: 752.0 ft

Casing: _____ Sampler: _____
 Type: FJ SS
 I.D.: 4 in 1.38 in
 Hammer Wt: 140 lb. 140 lb.
 Hammer Fall: 30 in. 30 in.
 Hammer/Rod Type: Auto/NWJ
 Rig: Mobile B-53 ATV C_E = 1.3

Groundwater Observations

Date	Depth (ft)	Notes

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
5							
10							
15							
20		S1 (19'-21'): Medium dense, dark brown fine to coarse SAND, some Silt, trace Organics, moist. With piece of coarse Gravel in spoon shoe. Rec. = 0.6 ft	6-6-7-7 (13)				
25		S2 (24'-26'): Dense, brown and light to dark gray fine to coarse GRAVEL and fine to coarse SAND, some Silt, damp. Rec. = 0.3 ft	32-33-15-18 (48)				
30		S3 (29'-31'): Very dense; S3A (upper 4''): light brown to gray fine to coarse SAND and SILT, trace fine Gravel, moist. S3B (lower 11''): dark gray SILT, damp. Rec. = 1.3 ft	13-4-48-67 (52)				
35		S4 (34'-36'): Medium dense, light and dark brown and gray SILT and fine to coarse SAND, little fine to coarse Gravel, moist. Rec. = 1.3 ft	17-12-11-6 (23)				
40		S5 (39'-41'): Medium dense, light brown SILT and fine and coarse GRAVEL, some fine to medium Sand, moist. Rec. = 0.6 ft	12-7-8-8 (15)				
45		S6 (44'-46'): Medium dense, grayish brown fine to coarse SAND and SILT, trace fine Gravel, moist. With 3'' in spoon shoe gray SILT, little fine to coarse SAND, moist. Rec. = 1.0 ft	25-10-8-6 (18)				
		S7 (49'-51'): Very dense, gray with dark gray layers SILT, little fine Sand, damp. With 3''	21-27-				

GEODESIGN BORING LOG 750-12.29 BORINGS.GPJ VERMONT AOT.GDT. 3/9/26

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BORING LOG

Plainfield ER P24-2 (610)
0750-12.29

Boring No.: B-108

Page No.: 2 of 2

Pin No.: 24M014

Checked By: JFW

Boring Crew: Sam Cooley (NEBC), Grace Benzi (GEO)
 Date Started: 8/20/24 Date Finished: 8/20/24
 VTSPG NAD83: _____
 Station: 33+75 Offset: 45' R
 Ground Elevation: 752.0 ft

	Casing	Sampler
Type:	FJ	SS
I.D.:	4 in	1.38 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/NWJ	
Rig:	Mobile B-53 ATV	C _E = 1.3

Groundwater Observations

Date	Depth (ft)	Notes

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		layer gray SILT and fine to medium SAND, moist. Rec. = 1.8 ft	37-48 (64)				
55		S8 (54'-56'): Very dense, gray with dark gray layers SILT, little fine Sand, damp. With 1" layers gray SILT and fine to medium SAND, moist. Rec. = 1.8 ft	16-25-40-47 (65)				
		Hole stopped @ 56.0 ft					
60		Remarks: 1) Occasional rig chatter around 42'-44'. Brown return water with black rock shavings at this same depth. 2) Increased casing resistance noted at 47'. 3) Gray return water with silt clumps 47'-49'. 4) Total casing used 49'. 5) Hammer energy is assumed.					
65							
70							
75							
80							
85							
90							
95							

GEODESIGN BORING LOG 750-12.29 BORINGS.GPJ VERMONT AOT.GDT. 3/9/26

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STATE OF VERMONT
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BORING LOG

Plainfield ER P24-2 (610)
0750-12.29

Boring No.: **B-109(IN)**

Page No.: 1 of 3

Pin No.: 24M014

Checked By: JFW

Boring Crew: Mike Nadeau (NTB), Jack Cassara (GEO)
 Date Started: 1/13/25 Date Finished: 1/14/25
 VTSPG NAD83: _____
 Station: 35+36 Offset: 70' L
 Ground Elevation: 780.0 ft

Casing Sampler
 Type: HSA/FJ SS
 I.D.: 4 in 1.38 in
 Hammer Wt: 140 lb. 140 lb.
 Hammer Fall: 30 in. 30 in.
 Hammer/Rod Type: Auto/NWJ
 Rig: Diedrich D-50 Track C_E = 1.3

Groundwater Observations		
Date	Depth (ft)	Notes
01/13/25	59.0	Wet Sample

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
5		S1 (0'-2'): Very loose, brown/gray SILT and fine to coarse SAND, trace Roots, trace leaves, trace twigs, moist/frost. Rec. = 0.5 ft	1-1-2-2 (3)				
		S2 (4'-6'): Loose, grayish brown SILT, some Clay, little fine Sand, moist. Rec. = 1.3 ft	3-3-3-4 (6)				
10		S3 (9'-11'): Loose, light brown/brown fine to medium SAND and SILT, dry. Rec. = 1.4 ft	3-3-3-3 (6)				
		S4 (14'-16'): Medium dense, brown to light brown fine to medium SAND, some Silt, dry/moist. Rec. = 1.3 ft	4-4-6-5 (10)				
20		Inferred Cobble.	6-17-23-31 (40)				
		S5 (19'-21'): Dense, brown/gray fine to coarse SAND, some Silt, trace fine to coarse Gravel, dry. Rec. = 0.7 ft					
25		S6 (24'-26'): Refusal, gray/brown fine to coarse SAND and fine to coarse GRAVEL, trace Silt, dry. Coarse gravel stuck in spoon tip. Rec. = 0.6 ft	62-50/3" (R)				
		S7 (29'-31'): Refusal; S7A(Top 10"): Brownish gray fine to coarse SAND, some Silt, moist. S7B (Bottom 6"): Gray SILT and fine to medium SAND, moist. Rec. = 1.3 ft	40-39-50/5" (R)				
35		S8 (34'-36'): Very dense, gray SILT, some fine to coarse Sand, trace fine to coarse Gravel, moist. Rec. = 1.8 ft	48-39-31-25 (70)				

GEODESIGN BORING LOG 750-12.29 BORINGS.GPJ VERMONT AOT.GDT 3/9/26

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BORING LOG

Plainfield ER P24-2 (610)
0750-12.29

Boring No.: **B-109(IN)**

Page No.: 2 of 3

Pin No.: 24M014

Checked By: JFW

Boring Crew: Mike Nadeau (NTB), Jack Cassara (GEO)
 Date Started: 1/13/25 Date Finished: 1/14/25
 VTSPG NAD83: _____
 Station: 35+36 Offset: 70' L
 Ground Elevation: 780.0 ft

Casing Sampler
 Type: HSA/FJ SS
 I.D.: 4 in 1.38 in
 Hammer Wt: 140 lb. 140 lb.
 Hammer/Rod Type: 30 in. 30 in.
 Hammer/Rod Type: Auto/NWJ
 Rig: Diedrich D-50 Track C_E = 1.3

Groundwater Observations		
Date	Depth (ft)	Notes
01/13/25	59.0	Wet Sample

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
40		S9 (39'-41'): Refusal, gray/brown fine to coarse SAND and SILT, trace fine Gravel, wet. Rec. = 0.8 ft	38-50/3" (R)				
45		S10 (44'-46'): Refusal, gray SILT, some fine Sand, trace fine Gravel, moist. Rec. = 0.8 ft	42-50/4" (R)				
50		Inferred 7ft Boulder.					
55		S11 (54'-56'): Very dense, gray SILT, trace to little fine Sand, moist/dry. Rec. = 2.0 ft	20-29-37-44 (66)				
60		S12 (59'-61'): Very dense, gray SILT, trace to little fine Sand, moist/wet. Rec. = 1.8 ft	22-30-41-48 (71)				
65		S13 (64'-66'): Refusal; S13A (Top 8''): Gray SILT, trace to little fine Sand, moist/wet. S13B (Bottom 5''): Gray SILT, trace fine to coarse Sand(in thin seams), moist. Rec. = 1.1 ft	25-37-53-50/4" (R)				
70		S14 (69'-71'): Refusal, gray SILT, trace fine to coarse Sand(in thin seams), moist. Rec. = 1.9 ft	23-36-50-50/5" (R)				

GEODESIGN BORING LOG 750-12.29 BORINGS.GPJ VERMONT AOT.GDT. 3/9/26

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BORING LOG

Plainfield ER P24-2 (610)
0750-12.29

Boring No.: **B-109(IN)**

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Pin No.: 24M014

Checked By: JFW

Boring Crew: Mike Nadeau (NTB), Jack Cassara (GEO)
 Date Started: 1/13/25 Date Finished: 1/14/25
 VTSPG NAD83: _____
 Station: 35+36 Offset: 70' L
 Ground Elevation: 780.0 ft

Casing Sampler
 Type: HSA/FJ SS
 I.D.: 4 in 1.38 in
 Hammer Wt: 140 lb. 140 lb.
 Hammer Fall: 30 in. 30 in.
 Hammer/Rod Type: Auto/NWJ
 Rig: Diedrich D-50 Track C_E = 1.3

Groundwater Observations		
Date	Depth (ft)	Notes
01/13/25	59.0	Wet Sample

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
75		S15 (74'-76'): Very dense, gray SILT, little fine Sand, moist. Rec. = 1.8 ft	30-32-36-50 (68)				
80		S16 (79'-81'): Very dense, gray SILT, trace fine Sand, moist. Rec. = 2.0 ft	25-27-45-54 (72)				
85		S17 (84'-86'): Very dense, gray SILT, some fine SAND, moist. Rec. = 1.8 ft	22-25-42-44 (67)				
90		S18 (89'-91'): Very dense, gray SILT and fine SAND, moist. Rec. = 1.7 ft	32-31-38-40 (69)				
95		S19 (94'-96'): Very dense, gray SILT and fine SAND, moist. Rec. = 2.0 ft	24-26-37-34 (63)				
100		Hole stopped @ 100.0 ft					
105		Remarks: 1) Driller noted cobbles at 18' and 33' to 35'. 2) Distinct soil color change to gray at approximately 31'. 3) Hollow Stem Auger was used to 50ft, before switching to casing. HSA=2.25 ID, 4.5 OD; FJ=4.0" 4) Auger cuttings sloppy gray silt while cleaning down to 50ft, Auger refusal st 47ft, Augers were removed before advancing casing to 47'. 5) Roller bit advanced from 47' to 54' through suspected 7ft boulder. Gray stone chips and graphite in wash water. Broke through at 54'. 6) Inclinator installed after cleaning borehole down to +/-100ft. Grout valve has ~6" and driller noted he was ~4" high, so bottom of inclinometer is at +/- 99'. Installed using GEOKON casing. Stand pipe installed 1/15/24. Grout approximately 20% cement mixture.					
110							

GEODESIGN BORING LOG 750-12.29 BORINGS.GPJ VERMONT AOT.GDT 3/9/26

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STATE OF VERMONT
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 BUREAU CENTRAL LABORATORY

BORING LOG

Plainfield ER P24-2 (610)
0750-12.29

Boring No.: **B-110(IN)**

Page No.: 1 of 3

Pin No.: 24M014

Checked By: JFW

Boring Crew: Mike Nadeau (NTB), Jack Cassara (GEO)
 Date Started: 1/15/25 Date Finished: 1/16/25
 VTSPG NAD83: _____
 Station: 35+05 Offset: 16' R
 Ground Elevation: 756.0 ft

Casing: HSA/FJ Sampler: SS
 Type: _____
 I.D.: 4 in 1.38 in
 Hammer Wt: 140 lb. 140 lb.
 Hammer Fall: 30 in. 30 in.
 Hammer/Rod Type: Auto/NWJ
 Rig: Diedrich D-50 Track C_E = 1.3

Groundwater Observations		
Date	Depth (ft)	Notes
01/15/25	29.0	Wet Sample

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
5	X X X	S1 (1'-3'): Loose, brownish gray SILT and fine SAND, moist. With top 2" fine to coarse SAND, trace fine Gravel, trace twigs (slush). Rec. = 1.6 ft	4-4-4-4 (8)				
	[Pattern]	S2 (4'-6'): Medium dense, brownish gray fine SAND and SILT. Top 10" wet, bottom 11" moist. Rec. = 1.8 ft	3-5-6-6 (11)				
10	[Pattern]	S3 (9'-11'): Medium dense, brownish gray fine to medium SAND, some Silt, moist. Rec. = 1.1 ft	4-6-5-5 (11)				
15	[Pattern]	S4 (14'-16'): Medium dense, brownish gray fine to medium SAND, some Silt, trace fine Gravel, moist. Rec. = 0.6 ft	5-4-6-5 (10)				
20	[Pattern]	S5 (19'-21'): Loose, brownish gray fine to medium SAND and SILT, moist. Rec. = 0.8 ft	5-4-5-6 (9)				
25	[Pattern]	S6 (24'-26'): Dense, gray/brown/orange fine to coarse SAND and fine to coarse GRAVEL(decomposed), little Silt, moist. Rec. = 1.0 ft	14-17-17-14 (34)				
30	[Pattern]	S7 (29'-31'): Very dense, gray/brown fine to coarse SAND and fine to coarse GRAVEL, little Silt, wet. Rec. = 0.9 ft	20-30-26-34 (56)				
35	[Pattern]	S8 (34'-36'): Very dense, gray/brown fine to coarse SAND, little to some Silt, trace fine to coarse Gravel, moist/wet. Rec. = 1.3 ft	18-40-21-16 (61)				

GEODESIGN BORING LOG 750-12.29 BORINGS.GPJ VERMONT AOT.GDT 3/9/26

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BORING LOG

Plainfield ER P24-2 (610)
0750-12.29

Boring No.: **B-110(IN)**

Page No.: 2 of 3

Pin No.: 24M014

Checked By: JFW

Boring Crew: Mike Nadeau (NTB), Jack Cassara (GEO)
 Date Started: 1/15/25 Date Finished: 1/16/25
 VTSPG NAD83: _____
 Station: 35+05 Offset: 16' R
 Ground Elevation: 756.0 ft

Casing Sampler
 Type: HSA/FJ SS
 I.D.: 4 in 1.38 in
 Hammer Wt: 140 lb. 140 lb.
 Hammer Fall: 30 in. 30 in.
 Hammer/Rod Type: Auto/NWJ
 Rig: Diedrich D-50 Track C_E = 1.3

Groundwater Observations		
Date	Depth (ft)	Notes
01/15/25	29.0	Wet Sample

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
40		S9 (39'-41'): Medium dense, grayish brown fine to coarse SAND, some Silt, trace fine Gravel. With 1" layer of coarse SAND and fine GRAVEL. With bottom 2" coarse GRAVEL. Coarse gravel stuck in spoon tip. Rec. = 1.2 ft	14-12-10-9 (22)				
45		S10 (44'-46'): Dense, gray/green/orange fine to coarse GRAVEL and fine to coarse SAND, trace Silt, wet. Rec. = 1.5 ft	26-17-27 (44)				
50		S11 (49'-51'): Medium dense, gray/brown/orange fine to coarse GRAVEL, trace fine to coarse SAND, trace Silt, wet. Rec. = 0.6 ft	15-9-6-5 (15)				
55		S12 (54'-56'): Medium dense, gray SILT, some fine Sand, wet/moist. Rec. = 1.3 ft	9-9-11-10 (20)				
		S13 (56'-58'): Dense, gray SILT, some fine Sand, moist. Rec. = 1.4 ft	9-16-23-27 (39)				
60		S14 (58'-60'): Dense, brownish gray layered SILT and fine SAND, trace Clay, wet. Rec. = 1.5 ft	17-20-24-29 (44)				
		S15 (60'-62'): Very dense, brownish gray layered SILT and fine SAND, trace Clay, moist. Rec. = 2.0 ft	26-26-33-40 (59)				
		S16 (62'-64'): Very dense, gray layered SILT and fine SAND, trace Clay, wet. Rec. = 1.7 ft	17-25-35-37 (60)				
65		S17 (64'-66'): Very dense, gray layered SILT and fine SAND, trace Clay, wet Rec. = 1.7 ft	19-30-34-39 (64)				
70							

GEODESIGN BORING LOG 750-12.29 BORINGS.GPJ VERMONT AOT.GDT. 3/9/26

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BORING LOG

Plainfield ER P24-2 (610)
0750-12.29

Boring No.: **B-110(IN)**

Page No.: 3 of 3

Pin No.: 24M014

Checked By: JFW

Boring Crew: Mike Nadeau (NTB), Jack Cassara (GEO)
 Date Started: 1/15/25 Date Finished: 1/16/25
 VTSPG NAD83: _____
 Station: 35+05 Offset: 16' R
 Ground Elevation: 756.0 ft

Casing: HSA/FJ Sampler: SS
 Type: _____
 I.D.: 4 in 1.38 in
 Hammer Wt: 140 lb. 140 lb.
 Hammer Fall: 30 in. 30 in.
 Hammer/Rod Type: Auto/NWJ
 Rig: Diedrich D-50 Track C_E = 1.3

Groundwater Observations		
Date	Depth (ft)	Notes
01/15/25	29.0	Wet Sample

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
75		S18 (74'-76'): Very dense, gray layered SILT and fine SAND, trace Clay, moist. Rec. = 1.8 ft	22-23-28-38 (51)				
85		S19 (84'-86'): Very dense, gray layered SILT and fine SAND, trace Clay, wet/moist. Rec. = 1.8 ft	18-21-29-40 (50)				
95		S20 (94'-96'): Very dense, gray layered SILT and fine SAND, moist. With thin Silty CLAY layer (<1" thick). Rec. = 2.0 ft	18-22-28-33 (50)				
100		Hole stopped @ 100.0 ft					
105		Remarks: 1) Solid auger advanced to 1' through frost prior to S1. Auger was then advanced to 5' prior to S2. Driller switched to 4.0" FJ casing and cleared borehole prior to S3. 2) Increased resistance at approximately 24', with possible graphite in wash water return (gray). 3) Driller noted smoother drilling at ~33' while clearing to 35'. Similar resistance was noted at 35' to 40'. 4) Gravel pushing into hole at approximately 45', heaving to ~43'. S10 sampled through disturbed gravel. 5) Driller noted less gravel and more silt in wash water return at ~54' while clearing to 55'. 6) Open hole after 55'. 7) S13, S15, S17 not per ASTM Standard. Borehole was not cleared to depth prior to sampling. 8) Cleared hole to 100' prior to installing inclinometer.					
110							

GEODESIGN BORING LOG 750-12.29 BORINGS.GPJ VERMONT AOT.GDT 3/9/26

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