C. Soil Boring Logs

MOTT MACDONALD M M

SOIL BORING LOG

BORING NO.: **B-01**
Page **1** of **2**

Project:	Powell Creek Solar	**Project No.:**	513385046-071
Location:	Miller City, OH	**Project Mgr:**	Eric Pauli
Client:	Avangrid Renewables	**Field Eng. Staff:**	Yuta Nakamura
Drilling Co.:	Ohio TestBor Inc.	**Date/Time Started:**	May 11, 2020 at 2:15 pm
Driller/Helper:	John Minchak /Keith Gibel	**Date/Time Finished:**	May 11, 2020 at 3:20 pm

Elevation: Grade ft. **Vertical Datum:** | **Boring Location:** See Boring Location Plan | **Coord.:** **Lat:** 41.10546 **Long:** -84.12062 | **Horizontal Datum:** NAD 1983

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	-
Length	5 ft	2 ft	-
Inside Dia. (in.)	4.25	1.375	-
Hammer Wt. (lb.)	140	140	-
Hammer Fall (in.)	30	30	-

Rig Make & Model: Diedrich D-50

☐ Truck ☐ Tripod ☐ Cat-Head
☐ ATV ☐ Geoprobe ☑ Winch
☑ Track ☐ Air Track ☐ Roller Bit
☐ Skid ☐ _____ ☑ Cutting Head

Hammer Type: ☐ Safety ☐ Doughnut ☑ Automatic ☐ _____

Drilling Fluid: ☐ Bentonite ☐ Polymer ☐ Water ☑ None

Drill Rod Size:

Casing Advance: Hollow Stem Auger

Depth/ Elev. (ft)	Sample No. / Interval (ft)	Rec. (in)	Sample Blows per 6"	Stratum Graphic	USCS Group Symbol	Visual - Manual Identification & Description (Density/consistency, color, Group Name, constituents, particle size, structure, moisture, optional descriptions, geologic interpretation, Symbol)	Field Tests: Dilatancy	Toughness	Plasticity	Dry Strength	Remarks
	S-1 0.0'- 2.0'	17	2 3 3 5		CL	Medium stiff, gray and brown CLAY, trace coarse to fine Sand, dry (CL)	N	M	M	L	PP = 2.0 tsf TV = 0.5 tsf
	S-2 2.0'- 4.0'	21	3 5 7 10		CL	Stiff, gray and brown CLAY, trace coarse to fine Sand, dry (CL)	N	H	M	M	PP = 3.0 tsf TV = 0.6 tsf
						4.0					
5	S-3 4.0'- 6.0'	23	5 7 10 15		ML	Very stiff, gray SILT, some medium to fine Sand, dry (ML)	N	H	L	L	PP > 4.5 tsf TV = 0.5 tsf
						6.0					
	S-4 6.0'- 8.0'	24	6 9 11 15		CL	Very stiff, brown CLAY, dry (CL)	N	H	M	M	PP > 4.5 tsf TV = 0.5 tsf
	S-5 8.0'- 10.0'	24	4 7 11 14		CL	Very stiff, brown CLAY, dry (CL)	N	H	M	M	PP > 4.5 tsf TV = 0.7 tsf
10											
						11.5					
	S-6 13.0'- 15.0'	23	4 5 8 11		CH	Stiff, dark brown CLAY, dry (CH)	N	M	H	M	PP = 4.0 tsf TV = 0.2 tsf
15											
	S-7 18.0'- 20.0'	23	4 4 6 9		CH	Stiff, dark brown CLAY, dry (CH)	N	M	H	M	PP = 3.5 tsf TV = 0.3 tsf

Water Level Data

Date	Time	Elapsed Time (hr)	Depth in feet to: Bot. of Casing	Bottom of Hole	Water

Sample Type

- **O** Open End Rod
- **T** Thin-Wall Tube
- **U** Undisturbed Sample
- **SS** Split Spoon Sample
- **G** Grab Sample

Notes:

PP = Pocket Penetrometer
TV = Torvane
No groundwater encountered during investigation.

Boring No.: **B-01**

Field Test Legend:
Dilatancy: N - None S - Slow R - Rapid
Toughness: L - Low M - Medium H - High
Plasticity: NP - Non-Plastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High VH - Very High

NOTES: 1.) "ppd" denotes soil sample average diametral pocket penetrometer reading. 2.) "ppa" denotes soil sample average axial pocket penetrometer reading.
3.) Maximum Particle Size is determined by direct observation within limitations of sampler size. 4.) Soil identifications and field tests based on visual-manual methods per ASTM D2488.

MOTT MACDONALD M M

SOIL BORING LOG
(continued)

BORING NO.: **B-01**
Page **2** of **2**

Depth/ Elev. (ft)	Sample No. / Interval (ft)	Rec. (in)	Sample Blows per 6"	Stratum Graphic	USCS Symbol Group	Visual - Manual Identification & Description (Density/consistency, color, Group Name, constituents, particle size, structure, moisture, optional descriptions, geologic interpretation, Symbol)	Field Tests: Dilatancy	Toughness	Plasticity	Dry Strength	Remarks
	S-8 23.0'-25.0'	24	4 4 7 10		CH	Stiff, dark brown CLAY, dry (CH)	N	M	H	M	PP = 3.5 tsf TV = 0.3 tsf
25						25.0 End of Boring at 25 feet BGS. Borehole backfilled with soil cuttings.					
30											
35											
40											
45											

PROJECT NO.: **513385046-071**

BORING NO.: **B-01**

NOTES: 1.) "ppd" denotes soil sample average diametral pocket penetrometer reading. 2.) "ppa" denotes soil sample average axial pocket penetrometer reading.
3.) Maximum Particle Size is determined by direct observation within limitations of sampler size. 4.) Soil identifications and field tests based on visual-manual methods per ASTM D2488.

MOTT MACDONALD

SOIL BORING LOG

BORING NO.: **B-02**
Page **1** of **2**

Project:	Powell Creek Solar	**Project No.:**	513385046-071
Location:	Miller City, OH	**Project Mgr:**	Eric Pauli
Client:	Avangrid Renewables	**Field Eng. Staff:**	Yuta Nakamura
Drilling Co.:	Ohio TestBor Inc.	**Date/Time Started:**	May 11, 2020 at 4:00 pm
Driller/Helper:	John Minchak /Keith Gibel	**Date/Time Finished:**	May 11, 2020 at 4:40 pm

Elevation: Grade ft. **Vertical Datum:**

Boring Location: See Boring Location Plan

Coord.: **Lat:** 41.10738 **Long:** -84.11629

Horizontal Datum: NAD 1983

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	-
Length	5 ft	2 ft	-
Inside Dia. (in.)	4.25	1.375	-
Hammer Wt. (lb.)	140	140	-
Hammer Fall (in.)	30	30	-

Rig Make & Model: Diedrich D-50

☐ Truck ☐ Tripod ☐ Cat-Head
☐ ATV ☐ Geoprobe ☑ Winch
☑ Track ☐ Air Track ☐ Roller Bit
☐ Skid ☐ _____ ☑ Cutting Head

Hammer Type
☐ Safety
☐ Doughnut
☑ Automatic
☐ _____

Drilling Fluid
☐ Bentonite
☐ Polymer
☐ Water
☑ None

Drill Rod Size:

Casing Advance
Hollow Stem Auger

Depth/ Elev. (ft)	Sample No. / Interval (ft)	Rec. (in)	Sample Blows per 6"	Stratum Graphic	USCS Group Symbol	Visual - Manual Identification & Description (Density/consistency, color, Group Name, constituents, particle size, structure, moisture, optional descriptions, geologic interpretation, Symbol)	Field Tests: Dilatancy	Toughness	Plasticity	Dry Strength	Remarks
	S-1 0.0'- 2.0'	22	3 3 4 4		CL	Medium stiff, gray and brown CLAY, some medium to fine Sand, dry (CL)	N	M	M	M	PP = 2.5 tsf TV = 0.2 tsf
	S-2 2.0'- 4.0'	21	3 3 4 5		CL	Medium stiff, gray and brown CLAY, some medium to fine Sand, dry (CL)	N	M	M	M	PP = 2.5 tsf TV = 0.35 tsf
5	S-3 4.0'- 6.0'	23	3 3 5 6		CL	Stiff, brown CLAY, trace medium to fine Sand, dry (CL)	N	H	M	M	PP = 2.5 tsf TV = 0.35 tsf
	S-4 6.0'- 8.0'	24	5 8 11 14		CL	Very stiff, dark brown CLAY, dry (CL)	N	H	M	H	PP = 4.5 tsf TV = 0.7 tsf
	S-5 8.0'- 10.0'	24	5 9 13 16		CL	Very stiff, dark brown CLAY, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 0.75 tsf
10											
	S-6 13.0'- 15.0'	24	4 6 9 13		CL	Very stiff, dark brown CLAY, dry (CL)	N	M	M	H	PP = 4.5 tsf TV = 0.75 tsf
15											
						16.5					
	S-7 18.0'- 20.0'	24	4 5 8 11		CH	Stiff, dark brown CLAY, dry (CH)	N	M	H	H	PP = 4.0 tsf TV = 0.85 tsf

Water Level Data

Date	Time	Elapsed Time (hr)	Depth in feet to: Bot. of Casing	Bottom of Hole	Water

Sample Type

- **O** Open End Rod
- **T** Thin-Wall Tube
- **U** Undisturbed Sample
- **SS** Split Spoon Sample
- **G** Grab Sample

Notes:

PP = Pocket Penetrometer
TV = Torvane
No groundwater encountered during investigation.

Boring No.: **B-02**

Field Test Legend:
Dilatancy: N - None S - Slow R - Rapid
Toughness: L - Low M - Medium H - High
Plasticity: NP - Non-Plastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High VH - Very High

NOTES: 1.) "ppd" denotes soil sample average diametral pocket penetrometer reading. 2.) "ppa" denotes soil sample average axial pocket penetrometer reading.
3.) Maximum Particle Size is determined by direct observation within limitations of sampler size. 4.) Soil identifications and field tests based on visual-manual methods per ASTM D2488.

MOTT MACDONALD M M

SOIL BORING LOG
(continued)

BORING NO.: **B-02**
Page **2** of **2**

Depth/ Elev. (ft)	Sample No. / Interval (ft)	Rec. (in)	Sample Blows per 6"	Stratum Graphic	USCS Symbol Group	Visual - Manual Identification & Description (Density/consistency, color, Group Name, constituents, particle size, structure, moisture, optional descriptions, geologic interpretation, Symbol)	Field Tests: Dilatancy	Toughness	Plasticity	Dry Strength	Remarks
	S-8 23.0'-25.0'	23	4 5 8 11		CH	Stiff, dark brown CLAY, dry (CH)	N	M	H	H	PP = 3.5 tsf TV = 0.65 tsf
25						25.0 End of Boring at 25 feet BGS. Borehole backfilled with soil cuttings.					
30											
35											
40											
45											

PROJECT NO.: **513385046-071**

BORING NO.: **B-02**

NOTES: 1.) "ppd" denotes soil sample average diametral pocket penetrometer reading. 2.) "ppa" denotes soil sample average axial pocket penetrometer reading.
3.) Maximum Particle Size is determined by direct observation within limitations of sampler size. 4.) Soil identifications and field tests based on visual-manual methods per ASTM D2488.

MOTT MACDONALD M M

SOIL BORING LOG

BORING NO.: **B-03**
Page **1** of **1**

Project:	Powell Creek Solar	**Project No.:**	513385046-071
Location:	Miller City, OH	**Project Mgr:**	Eric Pauli
Client:	Avangrid Renewables	**Field Eng. Staff:**	Yuta Nakamura
Drilling Co.:	Ohio TestBor Inc.	**Date/Time Started:**	May 12, 2020 at 11:00 am
Driller/Helper:	John Minchak /Keith Gibel	**Date/Time Finished:**	May 12, 2020 at 11:40 am

Elevation: Grade ft. **Vertical Datum:** | **Boring Location:** See Boring Location Plan | **Coord.:** **Lat:** 41.104115 **Long:** -84.11324 | **Horizontal Datum:** NAD 1983

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	-
Length	5 ft	2 ft	-
Inside Dia. (in.)	4.25	1.375	-
Hammer Wt. (lb.)	140	140	-
Hammer Fall (in.)	30	30	-

Rig Make & Model: Diedrich D-50

☐ Truck	☐ Tripod	☐ Cat-Head	
☐ ATV	☐ Geoprobe	☑ Winch	
☑ Track	☐ Air Track	☐ Roller Bit	
☐ Skid	☐ _____	☑ Cutting Head	

Hammer Type: ☐ Safety, ☐ Doughnut, ☑ Automatic, ☐ _____

Drilling Fluid: ☐ Bentonite, ☐ Polymer, ☐ Water, ☑ None

Drill Rod Size:

Casing Advance: Hollow Stem Auger

Depth/ Elev. (ft)	Sample No. / Interval (ft)	Rec. (in)	Sample Blows per 6"	Stratum Graphic	USCS Group Symbol	Visual - Manual Identification & Description (Density/consistency, color, Group Name, constituents, particle size, structure, moisture, optional descriptions, geologic interpretation, Symbol)	Field Tests: Dilatancy	Toughness	Plasticity	Dry Strength	Remarks
	S-1 0.0'- 2.0' 0.5'-'	14	2 2 3 4			0.5 (6") TOPSOIL	-	-	-	-	
					CL	Medium stiff, gray and brown CLAY, trace coarse to fine Sand, moist (CL)	N	M	M	M	PP = 3.0 tsf TV = 0.35 tsf
	S-2 2.0'- 4.0'	22	3 3 5 7		CL	Stiff, gray and brown CLAY, trace coarse to fine Sand, moist (CL)	N	M	M	M	PP = 3.5 tsf TV = 0.5 tsf
5	S-3 4.0'- 6.0'	24	3 5 7 10		CL	Stiff, gray and brown CLAY, some coarse to fine Sand, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 0.8 tsf
	S-4 6.0'- 8.0'	24	6 9 13 17		CL	Very stiff, brown CLAY, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 0.6 tsf
	S-5 8.0'- 10.0'	24	6 9 13 18		CL	Very stiff, brown CLAY, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.0 tsf
10						11.5					
	S-6 13.0'- 15.0'	24	2 4 5 7		CH	Stiff, dark brown CLAY, dry (CH)	N	M	H	H	PP = 3.0 tsf TV = 0.5 tsf
15											
	S-7 18.0'- 20.0'	24	3 4 7 10		CH	Stiff, dark brown CLAY, trace fine Gravel, dry (CH)	N	M	H	H	PP = 2.5 tsf TV = 0.5 tsf
						End of Boring at 20 feet BGS. 20.0 Borehole backfilled with soil cuttings.					

Water Level Data

Date	Time	Elapsed Time (hr)	Depth in feet to: Bot. of Casing	Bottom of Hole	Water

Sample Type

O	Open End Rod
T	Thin-Wall Tube
U	Undisturbed Sample
SS	Split Spoon Sample
G	Grab Sample

Notes:
PP = Pocket Penetrometer
TV = Torvane
No groundwater encountered during investigation.

Boring No.: **B-03**

Field Test Legend:
Dilatancy: N - None S - Slow R - Rapid
Toughness: L - Low M - Medium H - High
Plasticity: NP - Non-Plastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High VH - Very High

NOTES: 1.) "ppd" denotes soil sample average diametral pocket penetrometer reading. 2.) "ppa" denotes soil sample average axial pocket penetrometer reading.
3.) Maximum Particle Size is determined by direct observation within limitations of sampler size. 4.) Soil identifications and field tests based on visual-manual methods per ASTM D2488.

MOTT MACDONALD M M

SOIL BORING LOG

BORING NO.: **B-04**
Page **1** of **1**

Project:	Powell Creek Solar	**Project No.:**	513385046-071
Location:	Miller City, OH	**Project Mgr:**	Eric Pauli
Client:	Avangrid Renewables	**Field Eng. Staff:**	Yuta Nakamura
Drilling Co.:	Ohio TestBor Inc.	**Date/Time Started:**	May 13, 2020 at 5:30 pm
Driller/Helper:	John Minchak /Keith Gibel	**Date/Time Finished:**	May 13, 2020 at 6:10 pm

Elevation: Grade ft. **Vertical Datum:** | **Boring Location:** See Boring Location Plan | **Coord.:** **Lat:** 41.09999 **Long:** -84.14257 | **Horizontal Datum:** NAD 1983

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	-
Length	5 ft	2 ft	-
Inside Dia. (in.)	4.25	1.375	-
Hammer Wt. (lb.)	140	140	-
Hammer Fall (in.)	30	30	-

Rig Make & Model: Diedrich D-50

☐ Truck ☐ Tripod ☐ Cat-Head
☐ ATV ☐ Geoprobe ☑ Winch
☑ Track ☐ Air Track ☐ Roller Bit
☐ Skid ☐ _____ ☑ Cutting Head

Hammer Type: ☐ Safety ☐ Doughnut ☑ Automatic ☐ _____

Drilling Fluid: ☐ Bentonite ☐ Polymer ☐ Water ☑ None

Drill Rod Size:

Casing Advance: Hollow Stem Auger

Depth/ Elev. (ft)	Sample No. / Interval (ft)	Rec. (in)	Sample Blows per 6"	Stratum Graphic	USCS Group Symbol	Visual - Manual Identification & Description (Density/consistency, color, Group Name, constituents, particle size, structure, moisture, optional descriptions, geologic interpretation, Symbol)	Field Tests: Dilatancy	Toughness	Plasticity	Dry Strength	Remarks
	S-1 0.0'- 2.0'	16	1 2 2 3		CL	Medium stiff, brown and gray CLAY, trace medium to fine Sand, dry (CL)	N	M	M	M	PP = 2.0 tsf TV = 0.2 tsf
	S-2 2.0'- 4.0'	19	2 3 5 8		CL	Stiff, brown and gray CLAY, dry (CL)	N	H	M	M	PP = 4.5 tsf TV = 0.5 tsf
	S-3 4.0'- 6.0'	24	4 6 9 11		CL	Very stiff, brown CLAY, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.0 tsf
5	S-4 6.0'- 8.0'	24	3 4 7 9		CL	Stiff, brown CLAY, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.3 tsf
	S-5 8.0'- 10.0'	24	4 5 7 16		CL	Stiff, brown CLAY, dry (CL)	N	H	M	H	PP = 4.5 tsf TV = 1.5 tsf
10											
	S-6 13.0'- 15.0'	23	3 4 7 10		CL	Stiff, brown CLAY, dry (CL)	N	H	M	H	PP = 4.5 tsf TV = 1.3 tsf
15											
						16.5					
	S-7 18.0'- 20.0'	24	4 5 7 11		CH	Stiff, dark brown CLAY, dry (CH)	N	H	H	H	PP = 3.0 tsf TV = 0.9 tsf
						End of Boring at 20 feet BGS. Borehole backfilled with soil cuttings. 20.0					

Water Level Data

Date	Time	Elapsed Time (hr)	Depth in feet to: Bot. of Casing	Bottom of Hole	Water

Sample Type

O Open End Rod
T Thin-Wall Tube
U Undisturbed Sample
SS Split Spoon Sample
G Grab Sample

Notes:

PP = Pocket Penetrometer
TV = Torvane
No groundwater encountered during investigation.

Boring No.: **B-04**

Field Test Legend:
Dilatancy: N - None S - Slow R - Rapid
Toughness: L - Low M - Medium H - High
Plasticity: NP - Non-Plastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High VH - Very High

NOTES: 1.) "ppd" denotes soil sample average diametral pocket penetrometer reading. 2.) "ppa" denotes soil sample average axial pocket penetrometer reading.
3.) Maximum Particle Size is determined by direct observation within limitations of sampler size. 4.) Soil identifications and field tests based on visual-manual methods per ASTM D2488.

MOTT MACDONALD M M

SOIL BORING LOG

BORING NO.: **B-05**
Page **1** of **1**

Project:	Powell Creek Solar	**Project No.:**	513385046-071
Location:	Miller City, OH	**Project Mgr:**	Eric Pauli
Client:	Avangrid Renewables	**Field Eng. Staff:**	Yuta Nakamura
Drilling Co.:	Ohio TestBor Inc.	**Date/Time Started:**	May 13, 2020 at 4:30 pm
Driller/Helper:	John Minchak /Keith Gibel	**Date/Time Finished:**	May 13, 2020 at 5:10 pm

Elevation: Grade ft. **Vertical Datum:** | **Boring Location:** See Boring Location Plan | **Coord.:** **Lat:** 41.091746 **Long:** -84.14449 | **Horizontal Datum:** NAD 1983

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	-
Length	5 ft	2 ft	-
Inside Dia. (in.)	4.25	1.375	-
Hammer Wt. (lb.)	140	140	-
Hammer Fall (in.)	30	30	-

Rig Make & Model: Diedrich D-50

☐ Truck ☐ Tripod ☐ Cat-Head
☐ ATV ☐ Geoprobe ☑ Winch
☑ Track ☐ Air Track ☐ Roller Bit
☐ Skid ☐ _____ ☑ Cutting Head

Hammer Type: ☐ Safety ☐ Doughnut ☑ Automatic ☐ _____

Drilling Fluid: ☐ Bentonite ☐ Polymer ☐ Water ☑ None

Drill Rod Size:

Casing Advance: Hollow Stem Auger

Depth/ Elev. (ft)	Sample No. / Interval (ft)	Rec. (in)	Sample Blows per 6"	Stratum Graphic	USCS Group Symbol	Visual - Manual Identification & Description (Density/consistency, color, Group Name, constituents, particle size, structure, moisture, optional descriptions, geologic interpretation, Symbol)	Field Tests: Dilatancy	Toughness	Plasticity	Dry Strength	Remarks
	S-1 0.0'- 2.0'	20	2 3 3 5		CL	Medium stiff, brown and gray CLAY, dry (CL)	N	M	M	M	PP = 2.5 tsf TV = 0.2 tsf
	S-2 2.0'- 4.0'	19	2 3 6 10		CL	Stiff, brown CLAY, dry (CL)	N	M	M	M	PP = 3.5 tsf TV = 0.7 tsf
5	S-3 4.0'- 6.0'	20	5 6 8 11		CL	Stiff, brown CLAY, some Silt, trace coarse to fine Sand, trace Gravel, dry (CL)	N	M	L	L	PP = 4.5 tsf TV = N/A
	S-4 6.0'- 8.0'	21	5 7 8 11		CL	Very stiff, brown CLAY, dry (CL)	N	M	M	M	PP = 4.5 tsf TV = 1.0 tsf
	S-5 8.0'- 10.0'	24	5 6 6 11		CL	Stiff, brown CLAY, dry (CL)	N	H	M	H	PP = 4.0 tsf TV = 1.0 tsf
10						11.5					
	S-6 13.0'- 15.0'	24	3 4 7 9		CH	Stiff, dark brown CLAY, dry (CH)	N	M	H	H	PP = 3.5 tsf TV = 1.0 tsf
15											
	S-7 18.0'- 20.0'	24	3 4 7 8		CH	Stiff, dark brown CLAY, dry (CH)	N	M	H	H	PP = 3.5 tsf TV = 0.9 tsf
						End of Boring at 20 feet BGS. Borehole backfilled with soil cuttings. 20.0					

Water Level Data

Date	Time	Elapsed Time (hr)	Depth in feet to: Bot. of Casing	Bottom of Hole	Water

Sample Type

O Open End Rod
T Thin-Wall Tube
U Undisturbed Sample
SS Split Spoon Sample
G Grab Sample

Notes:

PP = Pocket Penetrometer
TV = Torvane
No groundwater encountered during investigation.

Boring No.: **B-05**

Field Test Legend:
Dilatancy: N - None S - Slow R - Rapid
Toughness: L - Low M - Medium H - High
Plasticity: NP - Non-Plastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High VH - Very High

NOTES: 1.) "ppd" denotes soil sample average diametral pocket penetrometer reading. 2.) "ppa" denotes soil sample average axial pocket penetrometer reading.
3.) Maximum Particle Size is determined by direct observation within limitations of sampler size. 4.) Soil identifications and field tests based on visual-manual methods per ASTM D2488.

MOTT MACDONALD M M

SOIL BORING LOG

BORING NO.: **B-06**

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Project:	Powell Creek Solar	**Project No.:**	513385046-071
Location:	Miller City, OH	**Project Mgr:**	Eric Pauli
Client:	Avangrid Renewables	**Field Eng. Staff:**	Yuta Nakamura
Drilling Co.:	Ohio TestBor Inc.	**Date/Time Started:**	May 14, 2020 at 9:00 am
Driller/Helper:	John Minchak /Keith Gibel	**Date/Time Finished:**	May 14, 2020 at 9:40 am

Elevation: Grade ft. **Vertical Datum:** | **Boring Location:** See Boring Location Plan | **Coord.:** **Lat:** 41.09461 **Long:** -84.14104 | **Horizontal Datum:** NAD 1983

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	-
Length	5 ft	2 ft	-
Inside Dia. (in.)	4.25	1.375	-
Hammer Wt. (lb.)	140	140	-
Hammer Fall (in.)	30	30	-

Rig Make & Model: Diedrich D-50

☐ Truck ☐ Tripod ☐ Cat-Head
☐ ATV ☐ Geoprobe ☑ Winch
☑ Track ☐ Air Track ☐ Roller Bit
☐ Skid ☐ _____ ☑ Cutting Head

Hammer Type: ☐ Safety ☐ Doughnut ☑ Automatic ☐ _____

Drilling Fluid: ☐ Bentonite ☐ Polymer ☐ Water ☑ None

Drill Rod Size:

Casing Advance: Hollow Stem Auger

Depth/ Elev. (ft)	Sample No. / Interval (ft)	Rec. (in)	Sample Blows per 6"	Stratum Graphic	USCS Group Symbol	Visual - Manual Identification & Description (Density/consistency, color, Group Name, constituents, particle size, structure, moisture, optional descriptions, geologic interpretation, Symbol)	Field Tests: Dilatancy	Toughness	Plasticity	Dry Strength	Remarks
	S-1 0.0'- 2.0' 0.3'-'	24	2 3 3 4		CL	0.3 (4") TOPSOIL Medium stiff, gray and brown CLAY, dry (CL)	- N	- M	- M	- M	PP = 2.5 tsf TV = 0.4 tsf
	S-2 2.0'- 4.0'	23	3 3 6 9		CL	Stiff, brown and gray CLAY, dry (CL)	N	H	M	M	PP = 3.0 tsf TV = 1.0 tsf
5	S-3 4.0'- 6.0'	24	2 4 5 8		CL	Stiff, brown and gray CLAY, dry (CL)	N	H	M	M	PP = 3.5 tsf TV = 0.6 tsf
	S-4 6.0'- 8.0'	23	3 4 6 18		CL	Stiff, brown CLAY, trace medium to fine Sand, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.17 tsf Occasional Sand partings.
	S-5 8.0'- 10.0'	24	4 6 10 11		CL	Very stiff, brown CLAY, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.8 tsf
10						11.5					
	S-6 13.0'- 15.0'	24	3 4 6 9		CH	Stiff, dark brown CLAY, dry (CH)	N	H	H	H	PP = 3.5 tsf TV = 0.8 tsf
15											
	S-7 18.0'- 20.0'	24	3 4 7 10		CH	Stiff, dark brown CLAY, dry (CH) End of Boring at 20 feet BGS. 20.0 Borehole backfilled with soil cuttings.	N	H	H	H	PP = 3.0 tsf TV = 0.5 tsf

Water Level Data

Date	Time	Elapsed Time (hr)	Depth in feet to: Bot. of Casing	Bottom of Hole	Water

Sample Type

O Open End Rod
T Thin-Wall Tube
U Undisturbed Sample
SS Split Spoon Sample
G Grab Sample

Notes:

PP = Pocket Penetrometer
TV = Torvane
No groundwater encountered during investigation.

Boring No.: **B-06**

Field Test Legend:
Dilatancy: N - None S - Slow R - Rapid
Toughness: L - Low M - Medium H - High
Plasticity: NP - Non-Plastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High VH - Very High

NOTES: 1.) "ppd" denotes soil sample average diametral pocket penetrometer reading. 2.) "ppa" denotes soil sample average axial pocket penetrometer reading.
3.) Maximum Particle Size is determined by direct observation within limitations of sampler size. 4.) Soil identifications and field tests based on visual-manual methods per ASTM D2488.

MOTT MACDONALD M M

SOIL BORING LOG

BORING NO.: **B-07**
Page **1** of **1**

Project:	Powell Creek Solar	**Project No.:**	513385046-071
Location:	Miller City, OH	**Project Mgr:**	Eric Pauli
Client:	Avangrid Renewables	**Field Eng. Staff:**	Yuta Nakamura
Drilling Co.:	Ohio TestBor Inc.	**Date/Time Started:**	May 13, 2020 at 6:50 pm
Driller/Helper:	John Minchak /Keith Gibel	**Date/Time Finished:**	May 13, 2020 at 7:20 pm

Elevation: Grade ft. **Vertical Datum:**

Boring Location: See Boring Location Plan

Coord.: **Lat:** 41.09622 **Long:** -84.131143

Horizontal Datum: NAD 1983

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	-
Length	5 ft	2 ft	-
Inside Dia. (in.)	4.25	1.375	-
Hammer Wt. (lb.)	140	140	-
Hammer Fall (in.)	30	30	-

Rig Make & Model: Diedrich D-50

☐ Truck ☐ Tripod ☐ Cat-Head
☐ ATV ☐ Geoprobe ☑ Winch
☑ Track ☐ Air Track ☐ Roller Bit
☐ Skid ☐ _____ ☑ Cutting Head

Hammer Type
☐ Safety
☐ Doughnut
☑ Automatic
☐ _____

Drilling Fluid
☐ Bentonite
☐ Polymer
☐ Water
☑ None

Drill Rod Size:

Casing Advance
Hollow Stem Auger

Depth/ Elev. (ft)	Sample No. / Interval (ft)	Rec. (in)	Sample Blows per 6"	Stratum Graphic	USCS Group Symbol	Visual - Manual Identification & Description (Density/consistency, color, Group Name, constituents, particle size, structure, moisture, optional descriptions, geologic interpretation, Symbol)	Field Tests: Dilatancy	Toughness	Plasticity	Dry Strength	Remarks
	S-1 0.0'- 2.0' 0.3'-'	23	3 3 3 4		CL	0.3 (4") TOPSOIL Medium stiff, brown and gray CLAY, trace medium to fine Sand, dry (CL)	- N	- M	- M	- M	PP = 2.0 tsf TV = 0.3 tsf
	S-2 2.0'- 4.0'	20	3 4 5 7		CL	Stiff, brown CLAY, dry (CL)	N	M	M	M	PP = 4.0 tsf TV = 0.9 tsf
5	S-3 4.0'- 6.0'	23	2 3 5 7		CL	Stiff, brown and gray CLAY, dry (CL)	N	M	M	M	PP = 4.0 tsf TV = 0.5 tsf
	S-4 6.0'- 8.0'	18	3 4 6 9		CL	Stiff, brown CLAY, dry (CL)	N	H	M	H	PP = 3.0 tsf TV = 1.0 tsf
	S-5 8.0'- 10.0'	24	3 5 6 9		CH	8.0 Stiff, dark brown CLAY, dry (CH)	N	H	H	H	PP = 3.5 tsf TV = 0.5 tsf
10											
	S-6 13.0'- 15.0'	24	3 3 6 8		CH	Stiff, dark brown CLAY, dry (CH)	N	M	H	H	PP = 2.5 tsf TV = 0.6 tsf
15											
	S-7 18.0'- 20.0'	24	4 5 9 11		CH	Stiff, dark brown CLAY, dry (CH) End of Boring at 20 feet BGS. 20.0 Borehole backfilled with soil cuttings.	N	M	H	H	PP = 3.5 tsf TV = 1.0 tsf

Water Level Data

Date	Time	Elapsed Time (hr)	Depth in feet to: Bot. of Casing	Bottom of Hole	Water

Sample Type

O Open End Rod
T Thin-Wall Tube
U Undisturbed Sample
SS Split Spoon Sample
G Grab Sample

Notes:

PP = Pocket Penetrometer
TV = Torvane
No groundwater encountered during investigation.

Boring No.: **B-07**

Field Test Legend:
Dilatancy: N - None S - Slow R - Rapid
Toughness: L - Low M - Medium H - High
Plasticity: NP - Non-Plastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High VH - Very High

NOTES: 1.) "ppd" denotes soil sample average diametral pocket penetrometer reading. 2.) "ppa" denotes soil sample average axial pocket penetrometer reading.
3.) Maximum Particle Size is determined by direct observation within limitations of sampler size. 4.) Soil identifications and field tests based on visual-manual methods per ASTM D2488.

MOTT MACDONALD M M

SOIL BORING LOG

BORING NO.: **B-08**
Page **1** of **1**

Project:	Powell Creek Solar	**Project No.:**	513385046-071
Location:	Miller City, OH	**Project Mgr:**	Eric Pauli
Client:	Avangrid Renewables	**Field Eng. Staff:**	Yuta Nakamura
Drilling Co.:	Ohio TestBor Inc.	**Date/Time Started:**	May 12, 2020 at 3:45 pm
Driller/Helper:	John Minchak /Keith Gibel	**Date/Time Finished:**	May 12, 2020 at 4:30 pm

Elevation: Grade ft. **Vertical Datum:** | **Boring Location:** See Boring Location Plan | **Coord.:** **Lat:** 41.09785 **Long:** -84.12940 | **Horizontal Datum:** NAD 1983

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	-
Length	5 ft	2 ft	-
Inside Dia. (in.)	4.25	1.375	-
Hammer Wt. (lb.)	140	140	-
Hammer Fall (in.)	30	30	-

Rig Make & Model: Diedrich D-50

☐ Truck	☐ Tripod	☐ Cat-Head	☐ Safety
☐ ATV	☐ Geoprobe	☑ Winch	☐ Doughnut
☑ Track	☐ Air Track	☐ Roller Bit	☑ Automatic
☐ Skid	☐ _____	☑ Cutting Head	☐ _____

Hammer Type

Drilling Fluid: ☐ Bentonite ☐ Polymer ☐ Water ☑ None

Drill Rod Size:

Casing Advance: Hollow Stem Auger

Depth/ Elev. (ft)	Sample No. / Interval (ft)	Rec. (in)	Sample Blows per 6"	Stratum Graphic	USCS Group Symbol	Visual - Manual Identification & Description (Density/consistency, color, Group Name, constituents, particle size, structure, moisture, optional descriptions, geologic interpretation, Symbol)	Field Tests: Dilatancy	Toughness	Plasticity	Dry Strength	Remarks
	S-1 0.0'- 2.0'	21	2 3 3 5		CL	Medium stiff, brown and gray CLAY, trace medium to fine Sand, dry (CL)	N	M	M	M	PP = 2.5 tsf TV = 0.4 tsf
	S-2 2.0'- 4.0'	19	2 3 5 9		CL	Stiff, brown CLAY, trace medium to fine Sand, dry (CL)	N	M	M	M	PP = 3.0 tsf TV = 0.6 tsf
5	S-3 4.0'- 6.0'	22	2 3 3 5		CL	Medium stiff, brown and gray CLAY, trace medium to fine Sand, moist (CL)	N	L	M	M	PP = 1.0 tsf TV = 0.15 tsf
						6.0					
	S-4 6.0'- 8.0'	24	6 7 8 13		SC	(12") - Brown medium to fine SAND, some Clay, wet (SC)	-	-	-	-	Perched water from 6 to 7 feet BGS.
	7.0'-'					7.0					
					CL	(12") - Brown CLAY, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.3 tsf
	S-5 8.0'- 10.0'	22	6 7 10 14		CL	Very stiff, brown CLAY, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.2 tsf
10											
						11.5					
	S-6 13.0'- 15.0'	24	4 5 7 10		CH	Stiff, dark brown CLAY, dry (CH)	N	M	H	H	PP = 2.5 tsf TV = 0.7 tsf
15											
	S-7 18.0'- 20.0'	24	3 4 7 9		CH	Stiff, dark brown CLAY, dry (CH)	-	-	-	-	PP = 3.0 tsf TV = 0.65 tsf
						End of Boring at 20 feet BGS. Borehole backfilled with soil cuttings.					
						20.0					

Water Level Data

Date	Time	Elapsed Time (hr)	Depth in feet to: Bot. of Casing	Bottom of Hole	Water

Sample Type

- **O** Open End Rod
- **T** Thin-Wall Tube
- **U** Undisturbed Sample
- **SS** Split Spoon Sample
- **G** Grab Sample

Notes:

PP = Pocket Penetrometer
TV = Torvane
No groundwater encountered during investigation.

Boring No.: **B-08**

Field Test Legend:
Dilatancy: N - None S - Slow R - Rapid
Toughness: L - Low M - Medium H - High
Plasticity: NP - Non-Plastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High VH - Very High

NOTES: 1.) "ppd" denotes soil sample average diametral pocket penetrometer reading. 2.) "ppa" denotes soil sample average axial pocket penetrometer reading.
3.) Maximum Particle Size is determined by direct observation within limitations of sampler size. 4.) Soil identifications and field tests based on visual-manual methods per ASTM D2488.

MOTT MACDONALD

SOIL BORING LOG

BORING NO.: **B-09**
Page **1** of **1**

Project:	Powell Creek Solar	**Project No.:**	513385046-071
Location:	Miller City, OH	**Project Mgr:**	Eric Pauli
Client:	Avangrid Renewables	**Field Eng. Staff:**	Yuta Nakamura
Drilling Co.:	Ohio TestBor Inc.	**Date/Time Started:**	May 12, 2020 at 12:55 pm
Driller/Helper:	John Minchak /Keith Gibel	**Date/Time Finished:**	May 12, 2020 at 1:30 pm

Elevation: Grade ft. **Vertical Datum:** | **Boring Location:** See Boring Location Plan | **Coord.:** **Lat:** 41.10057 **Long:** -84.12617 | **Horizontal Datum:** NAD 1983

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	-
Length	5 ft	2 ft	-
Inside Dia. (in.)	4.25	1.375	-
Hammer Wt. (lb.)	140	140	-
Hammer Fall (in.)	30	30	-

Rig Make & Model: Diedrich D-50

☐ Truck	☐ Tripod	☐ Cat-Head	
☐ ATV	☐ Geoprobe	☑ Winch	
☑ Track	☐ Air Track	☐ Roller Bit	
☐ Skid	☐ _____	☑ Cutting Head	

Hammer Type: ☐ Safety, ☐ Doughnut, ☑ Automatic, ☐ _____

Drilling Fluid: ☐ Bentonite, ☐ Polymer, ☐ Water, ☑ None

Drill Rod Size:

Casing Advance: Hollow Stem Auger

Depth/ Elev. (ft)	Sample No. / Interval (ft)	Rec. (in)	Sample Blows per 6"	Stratum Graphic	USCS Group Symbol	Visual - Manual Identification & Description (Density/consistency, color, Group Name, constituents, particle size, structure, moisture, optional descriptions, geologic interpretation, Symbol)	Field Tests: Dilatancy	Toughness	Plasticity	Dry Strength	Remarks
	S-1 0.0'- 2.0' 0.3'-'	24	3 2 3 4		CL	0.3 (4") - TOPSOIL Medium stiff, brown and gray CLAY, dry (CL)	- N	- L	- M	- M	PP = 2.5 tsf TV = 0.4 tsf
	S-2 2.0'- 4.0'	20	3 5 7 10		CL	Stiff, brown and gray CLAY, dry (CL)	N	M	M	M	PP = 4.0 tsf TV = 0.7 tsf
5	S-3 4.0'- 6.0'	23	4 7 11 15		CL	Very stiff, brown and gray CLAY, trace medium to fine Sand, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 0.85 tsf
	S-4 6.0'- 8.0'	23	6 8 10 15		CH	6.0 Very stiff, brown CLAY, dry (CH)	N	H	H	H	PP > 4.5 tsf TV = 0.75 tsf
	S-5 8.0'- 10.0'	24	5 6 10 13		CH	Very stiff, brown CLAY, dry (CH)	N	H	H	H	PP > 4.5 tsf TV = 1.0 tsf
10											
	S-6 13.0'- 15.0'	24	4 5 8 11		CH	Stiff, dark brown CLAY, dry (CL)	N	M	H	H	PP = 4.0 tsf TV = 1.2 tsf
15											
	S-7 18.0'- 20.0'	24	3 5 8 10		CH	Stiff, dark brown CLAY, dry (CL)	N	M	H	H	PP = 4.0 tsf TV = 1.3 tsf
						End of Boring at 20 feet BGS. 20.0 Borehole backfilled with soil cuttings.					

Water Level Data

Date	Time	Elapsed Time (hr)	Depth in feet to: Bot. of Casing	Bottom of Hole	Water

Sample Type

- **O** Open End Rod
- **T** Thin-Wall Tube
- **U** Undisturbed Sample
- **SS** Split Spoon Sample
- **G** Grab Sample

Notes:

PP = Pocket Penetrometer
TV = Torvane
No groundwater encountered during investigation.

Boring No.: **B-09**

Field Test Legend:
Dilatancy: N - None S - Slow R - Rapid
Toughness: L - Low M - Medium H - High
Plasticity: NP - Non-Plastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High VH - Very High

NOTES: 1.) "ppd" denotes soil sample average diametral pocket penetrometer reading. 2.) "ppa" denotes soil sample average axial pocket penetrometer reading.
3.) Maximum Particle Size is determined by direct observation within limitations of sampler size. 4.) Soil identifications and field tests based on visual-manual methods per ASTM D2488.

MOTT MACDONALD M M

SOIL BORING LOG

BORING NO.: **B-10**
Page **1** of **1**

Project:	Powell Creek Solar	**Project No.:**	513385046-071
Location:	Miller City, OH	**Project Mgr:**	Eric Pauli
Client:	Avangrid Renewables	**Field Eng. Staff:**	Yuta Nakamura
Drilling Co.:	Ohio TestBor Inc.	**Date/Time Started:**	May 12, 2020 at 2:45 pm
Driller/Helper:	John Minchak /Keith Gibel	**Date/Time Finished:**	May 12, 2020 at 3:25 pm

Elevation: Grade ft. **Vertical Datum:**

Boring Location: See Boring Location Plan

Coord.: **Lat:** 41.09836 **Long:** -84.12308

Horizontal Datum: NAD 1983

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	-
Length	5 ft	2 ft	-
Inside Dia. (in.)	4.25	1.375	-
Hammer Wt. (lb.)	140	140	-
Hammer Fall (in.)	30	30	-

Rig Make & Model: Diedrich D-50

☐ Truck ☐ Tripod ☐ Cat-Head
☐ ATV ☐ Geoprobe ☑ Winch
☑ Track ☐ Air Track ☐ Roller Bit
☐ Skid ☐ _____ ☑ Cutting Head

Hammer Type
☐ Safety
☐ Doughnut
☑ Automatic
☐ _____

Drilling Fluid
☐ Bentonite
☐ Polymer
☐ Water
☑ None

Drill Rod Size:

Casing Advance
Hollow Stem Auger

Depth/ Elev. (ft)	Sample No. / Interval (ft)	Rec. (in)	Sample Blows per 6"	Stratum Graphic	USCS Group Symbol	Visual - Manual Identification & Description (Density/consistency, color, Group Name, constituents, particle size, structure, moisture, optional descriptions, geologic interpretation, Symbol)	Field Tests: Dilatancy	Toughness	Plasticity	Dry Strength	Remarks
	S-1 0.0'- 2.0'	22	3 3 5 9		CL	Stiff, brown CLAY, dry (CL)	N	M	M	M	PP = 3.5 tsf TV = 0.5 tsf
	S-2 2.0'- 4.0'	20	3 6 10 14		CL	Very stiff, brown CLAY, dry (CL)	N	H	M	H	PP = 4.5 tsf TV = 0.75 tsf
5	S-3 4.0'- 6.0'	21	5 7 11 16		CL	Very stiff, brown and gray CLAY, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 0.7 tsf
	S-4 6.0'- 8.0'	18	5 7 10 13		CL	Very stiff, brown CLAY, trace medium to fine Sand, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.5 tsf
10	S-5 8.0'- 10.0'	24	4 4 9 14		CL	Stiff, brown CLAY, trace medium to fine Sand, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.7 tsf Occasional sand partings.
						11.5					
	S-6 13.0'- 15.0'	24	4 4 7 9		CH	Stiff, dark brown CLAY, little Silt, trace Sand, dry (CH)	N	M	H	H	PP > 4.5 tsf TV = 1.5 tsf
15											
	S-7 18.0'- 20.0'	24	4 6 9 12		CH	Very stiff, dark brown CLAY, dry (CH)	N	M	H	H	PP = 3.0 tsf TV = 1.1 tsf
						End of Boring at 20 feet BGS.					
						20.0 Borehole backfilled with soil cuttings.					

Water Level Data

Date	Time	Elapsed Time (hr)	Depth in feet to: Bot. of Casing	Bottom of Hole	Water

Sample Type

O Open End Rod
T Thin-Wall Tube
U Undisturbed Sample
SS Split Spoon Sample
G Grab Sample

Notes:

PP = Pocket Penetrometer
TV = Torvane
No groundwater encountered during investigation.

Boring No.: **B-10**

Field Test Legend:
Dilatancy: N - None S - Slow R - Rapid
Toughness: L - Low M - Medium H - High
Plasticity: NP - Non-Plastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High VH - Very High

NOTES: 1.) "ppd" denotes soil sample average diametral pocket penetrometer reading. 2.) "ppa" denotes soil sample average axial pocket penetrometer reading.
3.) Maximum Particle Size is determined by direct observation within limitations of sampler size. 4.) Soil identifications and field tests based on visual-manual methods per ASTM D2488.

MOTT MACDONALD M M

SOIL BORING LOG

BORING NO.: **B-11**
Page **1** of **1**

Project:	Powell Creek Solar	**Project No.:**	513385046-071
Location:	Miller City, OH	**Project Mgr:**	Eric Pauli
Client:	Avangrid Renewables	**Field Eng. Staff:**	Yuta Nakamura
Drilling Co.:	Ohio TestBor Inc.	**Date/Time Started:**	May 15, 2020 at 11:45 am
Driller/Helper:	John Minchak /Keith Gibel	**Date/Time Finished:**	May 15, 2020 at 12:20 pm

Elevation: Grade ft. **Vertical Datum:** | **Boring Location:** See Boring Location Plan | **Coord.:** **Lat:** 41.09938 **Long:** -84.10948 | **Horizontal Datum:** NAD 1983

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	-
Length	5 ft	2 ft	-
Inside Dia. (in.)	4.25	1.375	-
Hammer Wt. (lb.)	140	140	-
Hammer Fall (in.)	30	30	-

Rig Make & Model: Diedrich D-50

☐ Truck ☐ Tripod ☐ Cat-Head
☐ ATV ☐ Geoprobe ☑ Winch
☑ Track ☐ Air Track ☐ Roller Bit
☐ Skid ☐ _____ ☑ Cutting Head

Hammer Type: ☐ Safety ☐ Doughnut ☑ Automatic ☐ _____

Drilling Fluid: ☐ Bentonite ☐ Polymer ☐ Water ☑ None

Drill Rod Size:

Casing Advance: Hollow Stem Auger

Depth/ Elev. (ft)	Sample No. / Interval (ft)	Rec. (in)	Sample Blows per 6"	Stratum Graphic	USCS Group Symbol	Visual - Manual Identification & Description (Density/consistency, color, Group Name, constituents, particle size, structure, moisture, optional descriptions, geologic interpretation, Symbol)	Field Tests: Dilatancy	Toughness	Plasticity	Dry Strength	Remarks
	S-1 0.0'- 2.0' 0.5'-'	24	1 1 3 4			0.5 (6") - TOPSOIL	-	-	-	-	
					CL	Medium stiff, brown and gray CLAY, moist (CL)	N	L	M	M	PP = 2.0 tsf TV = 0.3 tsf
	S-2 2.0'- 4.0'	19	3 4 6 7		CL	Stiff, gray and brown CLAY, dry (CL)	N	M	M	M	PP = 3.0 tsf TV = 0.8 tsf
5	S-3 4.0'- 6.0'	23	3 4 5 7		CL	Stiff, gray and brown CLAY, dry (CL)	N	M	M	M	PP > 4.5 tsf TV = 0.9 tsf
	S-4 6.0'- 8.0'	24	5 7 10 14		CL	Very stiff, brown CLAY, trace medium to fine Sand, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.5 tsf Occasional Sand partings.
	S-5 8.0'- 10.0'	24	4 7 11 14		CL	Very stiff, brown CLAY, trace medium to fine Sand, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.1 tsf Occasional Sand partings.
10						11.5					
	S-6 13.0'- 15.0'	24	4 7 8 11		CH	Very stiff, dark brown CLAY, dry (CH)	N	H	H	H	PP = 4.0 tsf TV = 0.9 tsf
15											
	S-7 18.0'- 20.0'	24	4 5 7 11		CH	Stiff, dark brown CLAY, dry (CH)	N	H	H	H	PP = 3.5 tsf TV = 0.8 tsf
						End of Boring at 20 feet BGS. 20.0 Borehole backfilled with soil cuttings.					

Water Level Data

Date	Time	Elapsed Time (hr)	Depth in feet to: Bot. of Casing	Bottom of Hole	Water

Sample Type

O Open End Rod
T Thin-Wall Tube
U Undisturbed Sample
SS Split Spoon Sample
G Grab Sample

Notes:

PP = Pocket Penetrometer
TV = Torvane
No groundwater encountered during investigation.

Boring No.: **B-11**

Field Test Legend: Dilatancy: N - None S - Slow R - Rapid | Plasticity: NP - Non-Plastic L - Low M - Medium H - High
Toughness: L - Low M - Medium H - High | Dry Strength: N - None L - Low M - Medium H - High VH - Very High

NOTES: 1.) "ppd" denotes soil sample average diametral pocket penetrometer reading. 2.) "ppa" denotes soil sample average axial pocket penetrometer reading.
3.) Maximum Particle Size is determined by direct observation within limitations of sampler size. 4.) Soil identifications and field tests based on visual-manual methods per ASTM D2488.

MOTT MACDONALD M M

SOIL BORING LOG

BORING NO.: **B-12**
Page **1** of **1**

Project:	Powell Creek Solar	**Project No.:**	513385046-071
Location:	Miller City, OH	**Project Mgr:**	Eric Pauli
Client:	Avangrid Renewables	**Field Eng. Staff:**	Yuta Nakamura
Drilling Co.:	Ohio TestBor Inc.	**Date/Time Started:**	May 15, 2020 at 10:30 am
Driller/Helper:	John Minchak /Keith Gibel	**Date/Time Finished:**	May 15, 2020 at 11:10 am

Elevation: Grade ft. **Vertical Datum:** | **Boring Location:** See Boring Location Plan | **Coord.:** **Lat:** 41.09420 **Long:** -84.11099 | **Horizontal Datum:** NAD 1983

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	-
Length	5 ft	2 ft	-
Inside Dia. (in.)	4.25	1.375	-
Hammer Wt. (lb.)	140	140	-
Hammer Fall (in.)	30	30	-

Rig Make & Model: Diedrich D-50

☐ Truck ☐ Tripod ☐ Cat-Head
☐ ATV ☐ Geoprobe ☑ Winch
☑ Track ☐ Air Track ☐ Roller Bit
☐ Skid ☐ _____ ☑ Cutting Head

Hammer Type: ☐ Safety ☐ Doughnut ☑ Automatic ☐ _____

Drilling Fluid: ☐ Bentonite ☐ Polymer ☐ Water ☑ None

Drill Rod Size:

Casing Advance: Hollow Stem Auger

Depth/ Elev. (ft)	Sample No. / Interval (ft)	Rec. (in)	Sample Blows per 6"	Stratum Graphic	USCS Group Symbol	Visual - Manual Identification & Description (Density/consistency, color, Group Name, constituents, particle size, structure, moisture, optional descriptions, geologic interpretation, Symbol)	Field Tests: Dilatancy	Toughness	Plasticity	Dry Strength	Remarks
	S-1 0.0'- 2.0'	23	1 2 2 4		CL	Medium stiff, gray and brown CLAY, dry (CL)	N	L	M	M	PP = 2.5 tsf TV = 0.3 tsf
	S-2 2.0'- 4.0'	22	2 3 4 7		CL	Medium stiff, brown CLAY, moist (CL)	N	M	M	M	PP = 3.0 tsf TV = 0.7 tsf
						4.0					
5	S-3 4.0'- 6.0'	23	3 4 7 10		ML	Stiff, gray and brown SILT, dry (ML)	N	M	L	M	PP > 4.5 tsf TV = N/A Corrosion soil sample taken from 2 to 6 feet BGS.
						6.0					
	S-4 6.0'- 8.0'	24	6 9 11 16		CL	Very stiff, brown CLAY, trace medium to fine Sand, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.6 tsf
	S-5 8.0'- 10.0'	24	5 9 11 16		CL	Very stiff, brown CLAY, trace medium to fine Sand, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.3 tsf Occasional Sand partings.
10											
						11.5					
	S-6 13.0'- 15.0'	24	4 6 9 12		CH	Very stiff, dark brown CLAY, dry (CH)	N	H	H	H	PP = 3.5 tsf TV = 0.9 tsf
15											
	S-7 18.0'- 20.0'	24	4 6 8 11		CH	Stiff, dark brown CLAY, dry (CH)	N	H	H	H	PP = 4.0 tsf TV = 1.2 tsf
						End of Boring at 20 feet BGS.					
						20.0 Borehole backfilled with soil cuttings.					

Water Level Data

Date	Time	Elapsed Time (hr)	Depth in feet to: Bot. of Casing	Bottom of Hole	Water

Sample Type

O Open End Rod
T Thin-Wall Tube
U Undisturbed Sample
SS Split Spoon Sample
G Grab Sample

Notes:

PP = Pocket Penetrometer
TV = Torvane
No groundwater encountered during investigation.

Boring No.: **B-12**

Field Test Legend:
Dilatancy: N - None S - Slow R - Rapid
Toughness: L - Low M - Medium H - High
Plasticity: NP - Non-Plastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High VH - Very High

NOTES: 1.) "ppd" denotes soil sample average diametral pocket penetrometer reading. 2.) "ppa" denotes soil sample average axial pocket penetrometer reading.
3.) Maximum Particle Size is determined by direct observation within limitations of sampler size. 4.) Soil identifications and field tests based on visual-manual methods per ASTM D2488.

MOTT MACDONALD M M

SOIL BORING LOG

BORING NO.: **B-13**
Page **1** of **1**

Project:	Powell Creek Solar	**Project No.:**	513385046-071
Location:	Miller City, OH	**Project Mgr:**	Eric Pauli
Client:	Avangrid Renewables	**Field Eng. Staff:**	Yuta Nakamura
Drilling Co.:	Ohio TestBor Inc.	**Date/Time Started:**	May 26, 2020 at 11:30 am
Driller/Helper:	John Minchak /Keith Gibel	**Date/Time Finished:**	May 26, 2020 at 12:05 pm

Elevation: Grade ft. **Vertical Datum:** | **Boring Location:** See Boring Location Plan | **Coord.:** **Lat:** 41.09732 **Long:** -84.10349 | **Horizontal Datum:** NAD 1983

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	-
Length	5 ft	2 ft	-
Inside Dia. (in.)	4.25	1.375	-
Hammer Wt. (lb.)	140	140	-
Hammer Fall (in.)	30	30	-

Rig Make & Model: Diedrich D-50

☐ Truck	☐ Tripod	☐ Cat-Head	
☐ ATV	☐ Geoprobe	☑ Winch	
☑ Track	☐ Air Track	☐ Roller Bit	
☐ Skid	☐ _____	☑ Cutting Head	

Hammer Type: ☐ Safety, ☐ Doughnut, ☑ Automatic, ☐ _____

Drilling Fluid: ☐ Bentonite, ☐ Polymer, ☐ Water, ☑ None

Drill Rod Size:

Casing Advance: Hollow Stem Auger

Depth/ Elev. (ft)	Sample No. / Interval (ft)	Rec. (in)	Sample Blows per 6"	Stratum Graphic	USCS Group Symbol	Visual - Manual Identification & Description (Density/consistency, color, Group Name, constituents, particle size, structure, moisture, optional descriptions, geologic interpretation, Symbol)	Field Tests: Dilatancy	Toughness	Plasticity	Dry Strength	Remarks
	S-1 0.0'- 2.0' 0.8'-'	20	1 1 2 3			(10") - TOPSOIL 0.8	-	-	-	-	
					CL	Soft, brown and gray CLAY, moist (CL)	N	M	M	M	PP = 2.0 tsf TV = 0.4 tsf
	S-2 2.0'- 4.0'	19	2 2 3 5		CL	Medium stiff, brown and gray CLAY, trace coarse to fine Sand, moist (CL) 4.0	N	M	M	M	PP = 2.0 tsf TV = 0.4 tsf
5	S-3 4.0'- 6.0'	23	3 4 8 10		ML	Stiff, gray and brown SILT, dry (ML) 6.0	N	M	L	M	PP > 4.5 tsf TV = 1.1 tsf
	S-4 6.0'- 8.0'	20	5 8 10 13		CL	Very stiff, brown and gray CLAY, trace medium to fine Sand, dry (CL)	N	H	M	M	PP > 4.5 tsf TV = 1.3 tsf Occasional Sand partings.
	S-5 8.0'- 10.0'	24	4 6 9 13		CL	Very stiff, brown CLAY, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.5 tsf
10											
	S-6 13.0'- 15.0'	24	4 6 9 11		CL	Very stiff, brown CLAY, trace medium to fine Sand, dry (CL)	N	H	M	H	PP = 4.5 tsf TV = 1.0 tsf Occasional Sand partings.
15						16.5					
	S-7 18.0'- 20.0'	24	4 5 8 11		CH	Stiff, dark brown CLAY, dry (CH) End of Boring at 20 feet BGS. 20.0 Borehole backfilled with soil cuttings.	N	H	H	H	PP = 3.5 tsf TV = 0.9 tsf

Water Level Data

Date	Time	Elapsed Time (hr)	Depth in feet to: Bot. of Casing	Bottom of Hole	Water

Sample Type

O	Open End Rod
T	Thin-Wall Tube
U	Undisturbed Sample
SS	Split Spoon Sample
G	Grab Sample

Notes:
PP = Pocket Penetrometer
TV = Torvane
No groundwater encountered during investigation.

Boring No.: **B-13**

Field Test Legend:
Dilatancy: N - None S - Slow R - Rapid
Toughness: L - Low M - Medium H - High
Plasticity: NP - Non-Plastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High VH - Very High

NOTES: 1.) "ppd" denotes soil sample average diametral pocket penetrometer reading. 2.) "ppa" denotes soil sample average axial pocket penetrometer reading.
3.) Maximum Particle Size is determined by direct observation within limitations of sampler size. 4.) Soil identifications and field tests based on visual-manual methods per ASTM D2488.

MOTT MACDONALD M M

SOIL BORING LOG

BORING NO.: **B-14**
Page **1** of **1**

Project:	Powell Creek Solar	**Project No.:**	513385046-071
Location:	Miller City, OH	**Project Mgr:**	Eric Pauli
Client:	Avangrid Renewables	**Field Eng. Staff:**	Yuta Nakamura
Drilling Co.:	Ohio TestBor Inc.	**Date/Time Started:**	May 26, 2020 at 12:30 pm
Driller/Helper:	John Minchak /Keith Gibel	**Date/Time Finished:**	May 26, 2020 at 1:10 pm

Elevation: Grade ft. **Vertical Datum:** | **Boring Location:** See Boring Location Plan | **Coord.:** **Lat:** 41.10093 **Long:** -84.09970 | **Horizontal Datum:** NAD 1983

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	-
Length	5 ft	2 ft	-
Inside Dia. (in.)	4.25	1.375	-
Hammer Wt. (lb.)	140	140	-
Hammer Fall (in.)	30	30	-

Rig Make & Model: Diedrich D-50

☐ Truck	☐ Tripod	☐ Cat-Head	
☐ ATV	☐ Geoprobe	☑ Winch	
☑ Track	☐ Air Track	☐ Roller Bit	
☐ Skid	☐ _____	☑ Cutting Head	

Hammer Type: ☐ Safety, ☐ Doughnut, ☑ Automatic, ☐ _____

Drilling Fluid: ☐ Bentonite, ☐ Polymer, ☐ Water, ☑ None

Drill Rod Size:

Casing Advance: Hollow Stem Auger

Depth/ Elev. (ft)	Sample No. / Interval (ft)	Rec. (in)	Sample Blows per 6"	Stratum Graphic	USCS Group Symbol	Visual - Manual Identification & Description (Density/consistency, color, Group Name, constituents, particle size, structure, moisture, optional descriptions, geologic interpretation, Symbol)	Field Tests: Dilatancy	Toughness	Plasticity	Dry Strength	Remarks
	S-1 0.0'- 2.0'	24	2 3 3 5			(12") - TOPSOIL	-	-	-	-	
	1.0'-'				CL	1.0 Brown and gray CLAY, moist (CL)	N	M	M	M	PP = 1.5 tsf TV = 0.5 tsf
	S-2 2.0'- 4.0'	20	2 3 5 6		CL	Stiff, brown and gray CLAY, dry (CL)	N	M	M	M	PP = 3.0 tsf TV = 0.7 tsf
5	S-3 4.0'- 6.0'	23	2 3 4 6		CL	Medium stiff, brown CLAY, dry (CL)	N	M	M	M	PP = 2.5 tsf TV = 0.7 tsf
	S-4 6.0'- 8.0'	24	3 3 4 8		CH	6.0 Medium stiff, gray and brown CLAY, moist (CH)	N	M	H	M	PP = 1.5 tsf TV = 0.2 tsf
	S-5 8.0'- 10.0'	24	4 5 8 11		CL	8.0 Stiff, brown CLAY, trace coarse to fine Sand, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.3 tsf
10						11.5					
	S-6 13.0'- 15.0'	24	4 6 9 11		CH	Very stiff, dark brown CLAY, dry (CH)	N	H	H	H	PP = 3.5 tsf TV = 0.9 tsf
15											
	S-7 18.0'- 20.0'	24	3 5 7 9		CH	Stiff, dark brown CLAY, dry (CH)	N	H	H	H	PP = 3.0 tsf TV = 0.8 tsf
						End of Boring at 20 feet BGS. 20.0 Borehole backfilled with soil cuttings.					

Water Level Data

Date	Time	Elapsed Time (hr)	Depth in feet to: Bot. of Casing	Bottom of Hole	Water

Sample Type

O	Open End Rod
T	Thin-Wall Tube
U	Undisturbed Sample
SS	Split Spoon Sample
G	Grab Sample

Notes:
PP = Pocket Penetrometer
TV = Torvane
No groundwater encountered during investigation.

Boring No.: **B-14**

Field Test Legend:
Dilatancy: N - None S - Slow R - Rapid
Toughness: L - Low M - Medium H - High
Plasticity: NP - Non-Plastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High VH - Very High

NOTES: 1.) "ppd" denotes soil sample average diametral pocket penetrometer reading. 2.) "ppa" denotes soil sample average axial pocket penetrometer reading.
3.) Maximum Particle Size is determined by direct observation within limitations of sampler size. 4.) Soil identifications and field tests based on visual-manual methods per ASTM D2488.

MOTT MACDONALD M M

SOIL BORING LOG

BORING NO.: **B-15**
Page **1** of **1**

Project:	Powell Creek Solar	**Project No.:**	513385046-071
Location:	Miller City, OH	**Project Mgr:**	Eric Pauli
Client:	Avangrid Renewables	**Field Eng. Staff:**	Yuta Nakamura
Drilling Co.:	Ohio TestBor Inc.	**Date/Time Started:**	May 27, 2020 at 8:45 am
Driller/Helper:	John Minchak /Keith Gibel	**Date/Time Finished:**	May 27, 2020 at 9:25 am

Elevation: Grade ft. **Vertical Datum:** | **Boring Location:** See Boring Location Plan | **Coord.:** **Lat:** 41.09472 **Long:** -84.09656 | **Horizontal Datum:** NAD 1983

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	-
Length	5 ft	2 ft	-
Inside Dia. (in.)	4.25	1.375	-
Hammer Wt. (lb.)	140	140	-
Hammer Fall (in.)	30	30	-

Rig Make & Model: Diedrich D-50

☐ Truck	☐ Tripod	☐ Cat-Head	
☐ ATV	☐ Geoprobe	☑ Winch	
☑ Track	☐ Air Track	☐ Roller Bit	
☐ Skid	☐ _____	☑ Cutting Head	

Hammer Type: ☐ Safety, ☐ Doughnut, ☑ Automatic, ☐ _____

Drilling Fluid: ☐ Bentonite, ☐ Polymer, ☐ Water, ☑ None

Drill Rod Size:

Casing Advance: Hollow Stem Auger

Depth/ Elev. (ft)	Sample No. / Interval (ft)	Rec. (in)	Sample Blows per 6"	Stratum Graphic	USCS Group Symbol	Visual - Manual Identification & Description (Density/consistency, color, Group Name, constituents, particle size, structure, moisture, optional descriptions, geologic interpretation, Symbol)	Field Tests: Dilatancy	Toughness	Plasticity	Dry Strength	Remarks
	S-1 0.0'- 2.0' 0.5'-'	21	1 2 3 5			0.5 (6") - TOPSOIL	-	-	-	-	
					CL	Medium stiff, brown and gray CLAY, moist (CL)	N	M	M	M	PP = 2.5 tsf TV = 0.7 tsf
	S-2 2.0'- 4.0'	21	3 5 7 10		CL	Stiff, brown and gray CLAY, little Silt, trace medium to fine Sand, dry (CL)	N	M	M	M	PP = 4.0 tsf TV = 1.0 tsf
						4.0					
	S-3 4.0'- 6.0'	24	3 5 8 11		ML	Stiff, gray and brown SILT, dry (ML)	N	H	L	M	PP = 4.5 tsf TV = 1.1 tsf
5						6.0					
	S-4 6.0'- 8.0'	24	7 8 10 13		CL	Very stiff, brown and gray CLAY, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.2 tsf
	S-5 8.0'- 10.0'	23	4 6 8 12		CL	Stiff, brown and gray CLAY, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 0.8 tsf
10											
	S-6 13.0'- 15.0'	24	4 7 10 10		CL	Very stiff, brown CLAY, trace medium to fine Sand, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.3 tsf Occasional Sand partings.
15											
						16.5					
	S-7 18.0'- 20.0'	24	4 5 6 9		CH	Stiff, dark brown CLAY, dry (CH)	N	H	H	H	PP = 3.0 tsf TV = 0.8 tsf
						End of Boring at 20 feet BGS. Borehole backfilled with soil cuttings. 20.0					

Water Level Data

Date	Time	Elapsed Time (hr)	Depth in feet to: Bot. of Casing	Bottom of Hole	Water

Sample Type

O	Open End Rod
T	Thin-Wall Tube
U	Undisturbed Sample
SS	Split Spoon Sample
G	Grab Sample

Notes:
PP = Pocket Penetrometer
TV = Torvane
No groundwater encountered during investigation.

Boring No.: **B-15**

Field Test Legend: Dilatancy: N - None S - Slow R - Rapid | Toughness: L - Low M - Medium H - High | Plasticity: NP - Non-Plastic L - Low M - Medium H - High | Dry Strength: N - None L - Low M - Medium H - High VH - Very High

NOTES: 1.) "ppd" denotes soil sample average diametral pocket penetrometer reading. 2.) "ppa" denotes soil sample average axial pocket penetrometer reading.
3.) Maximum Particle Size is determined by direct observation within limitations of sampler size. 4.) Soil identifications and field tests based on visual-manual methods per ASTM D2488.

MOTT MACDONALD M M

SOIL BORING LOG

BORING NO.: **B-16**
Page **1** of **1**

Project:	Powell Creek Solar	**Project No.:**	513385046-071
Location:	Miller City, OH	**Project Mgr:**	Eric Pauli
Client:	Avangrid Renewables	**Field Eng. Staff:**	Yuta Nakamura
Drilling Co.:	Ohio TestBor Inc.	**Date/Time Started:**	May 14, 2020 at 2:45 pm
Driller/Helper:	John Minchak /Keith Gibel	**Date/Time Finished:**	May 14, 2020 at 3:30 pm

Elevation: Grade ft. **Vertical Datum:** | **Boring Location:** See Boring Location Plan | **Coord.:** **Lat:** 41.091072 **Long:** -84.107717 | **Horizontal Datum:** NAD 1983

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	-
Length	5 ft	2 ft	-
Inside Dia. (in.)	4.25	1.375	-
Hammer Wt. (lb.)	140	140	-
Hammer Fall (in.)	30	30	-

Rig Make & Model: Diedrich D-50

☐ Truck ☐ Tripod ☐ Cat-Head
☐ ATV ☐ Geoprobe ☑ Winch
☑ Track ☐ Air Track ☐ Roller Bit
☐ Skid ☐ _____ ☑ Cutting Head

Hammer Type: ☐ Safety ☐ Doughnut ☑ Automatic ☐ _____

Drilling Fluid: ☐ Bentonite ☐ Polymer ☐ Water ☑ None

Drill Rod Size:

Casing Advance: Hollow Stem Auger

Depth/ Elev. (ft)	Sample No. / Interval (ft)	Rec. (in)	Sample Blows per 6"	Stratum Graphic	USCS Group Symbol	Visual - Manual Identification & Description (Density/consistency, color, Group Name, constituents, particle size, structure, moisture, optional descriptions, geologic interpretation, Symbol)	Field Tests: Dilatancy	Toughness	Plasticity	Dry Strength	Remarks
	S-1 0.0'- 2.0'	20	1 1 2 4		CL	Soft, brown CLAY, trace medium to fine Sand, dry (CL)	N	M	M	M	PP = 2.0 tsf TV = 0.2 tsf
	S-2 2.0'- 4.0'	20	2 4 5 8		CL	Stiff, brown CLAY, dry (CL)	N	M	M	M	PP = 3.0 tsf TV = 0.4 tsf
5	S-3 4.0'- 6.0'	23	3 5 7 10		CL	Stiff, brown and gray CLAY, little Silt, trace medium to fine Sand, dry (CL)	N	M	L	N	PP = 4.0 tsf TV = 0.5 tsf
	S-4 6.0'- 8.0'	24	5 8 10 13		CL	Very stiff, brown and gray CLAY, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 0.6 tsf
10	S-5 8.0'- 10.0'	24	4 6 9 13		CL	Very stiff, brown CLAY, trace medium to fine Sand, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 0.3 tsf Occasional Sand partings.
	S-6 13.0'- 15.0'	24	4 7 10 14		CL	Very stiff, brown CLAY, trace medium to fine Sand, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.4 tsf Occasional Sand partings.
15						16.5					
	S-7 18.0'- 20.0'	24	5 7 9 12		CH	Very stiff, dark brown CLAY, dry (CH)	N	H	H	H	PP = 3.0 tsf TV = 0.8 tsf
						End of Boring at 20 feet BGS. Borehole backfilled with soil cuttings. 20.0					

Water Level Data

Date	Time	Elapsed Time (hr)	Depth in feet to: Bot. of Casing	Bottom of Hole	Water

Sample Type

O Open End Rod
T Thin-Wall Tube
U Undisturbed Sample
SS Split Spoon Sample
G Grab Sample

Notes:

PP = Pocket Penetrometer
TV = Torvane
No groundwater encountered during investigation.

Boring No.: **B-16**

Field Test Legend:
Dilatancy: N - None S - Slow R - Rapid
Toughness: L - Low M - Medium H - High
Plasticity: NP - Non-Plastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High VH - Very High

NOTES: 1.) "ppd" denotes soil sample average diametral pocket penetrometer reading. 2.) "ppa" denotes soil sample average axial pocket penetrometer reading.
3.) Maximum Particle Size is determined by direct observation within limitations of sampler size. 4.) Soil identifications and field tests based on visual-manual methods per ASTM D2488.

MOTT MACDONALD M M

SOIL BORING LOG

BORING NO.: **B-17**
Page **1** of **1**

Project:	Powell Creek Solar	**Project No.:**	513385046-071
Location:	Miller City, OH	**Project Mgr:**	Eric Pauli
Client:	Avangrid Renewables	**Field Eng. Staff:**	Yuta Nakamura
Drilling Co.:	Ohio TestBor Inc.	**Date/Time Started:**	May 13, 2020 at 11:05 am
Driller/Helper:	John Minchak /Keith Gibel	**Date/Time Finished:**	May 13, 2020 at 11:55 am

Elevation: Grade ft. **Vertical Datum:** | **Boring Location:** See Boring Location Plan | **Coord.:** **Lat:** 41.09230 **Long:** -84.13774 | **Horizontal Datum:** NAD 1983

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	-
Length	5 ft	2 ft	-
Inside Dia. (in.)	4.25	1.375	-
Hammer Wt. (lb.)	140	140	-
Hammer Fall (in.)	30	30	-

Rig Make & Model: Diedrich D-50

☐ Truck	☐ Tripod	☐ Cat-Head	☐ Safety
☐ ATV	☐ Geoprobe	☑ Winch	☐ Doughnut
☑ Track	☐ Air Track	☐ Roller Bit	☑ Automatic
☐ Skid	☐ _____	☑ Cutting Head	☐ _____

Hammer Type

Drilling Fluid
☐ Bentonite
☐ Polymer
☐ Water
☑ None

Drill Rod Size:

Casing Advance
Hollow Stem Auger

Depth/ Elev. (ft)	Sample No. / Interval (ft)	Rec. (in)	Sample Blows per 6"	Stratum Graphic	USCS Group Symbol	Visual - Manual Identification & Description (Density/consistency, color, Group Name, constituents, particle size, structure, moisture, optional descriptions, geologic interpretation, Symbol)	Field Tests: Dilatancy	Toughness	Plasticity	Dry Strength	Remarks
	S-1 0.0'- 2.0'	20	2 3 3 5		CL	Medium stiff, brown and gray CLAY, trace medium to fine Sand, dry (CL)	N	M	M	M	PP = 3.0 tsf TV = 0.5 tsf
	S-2 2.0'- 4.0'	20	3 7 10 12		CL	Very stiff, brown and gray CLAY, trace medium to fine Sand, dry (CL)	N	H	M	M	PP > 4.5 tsf TV = 1.4 tsf
5	S-3 4.0'- 6.0'	24	5 7 10 16		CL	Very stiff, brown CLAY, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 0.9 tsf
	S-4 6.0'- 8.0'	24	5 9 10 16		CL	Very stiff, brown and gray CLAY, trace medium to fine Sand, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.3 tsf Occasional Sand partings.
	S-5 8.0'- 10.0'	22	4 8 12 13		CL	Very stiff, brown and gray CLAY, trace medium to fine Sand, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.2 tsf Occasional Sand partings.
10											
	S-6 13.0'- 15.0'	24	5 7 10 12		CL	Very stiff, brown CLAY, trace medium to fine Sand, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 0.6 tsf Occasional Sand partings.
15											
						16.5					
	S-7 18.0'- 20.0'	24	5 8 9 11		CH	Very stiff, dark brown CLAY, dry (CH)	N	H	H	H	PP = 3.5 tsf TV = 0.9 tsf
						End of Boring at 20 feet BGS.					
						20.0 Borehole backfilled with soil cuttings.					

Water Level Data

Date	Time	Elapsed Time (hr)	Depth in feet to: Bot. of Casing	Bottom of Hole	Water

Sample Type

O	Open End Rod
T	Thin-Wall Tube
U	Undisturbed Sample
SS	Split Spoon Sample
G	Grab Sample

Notes:
PP = Pocket Penetrometer
TV = Torvane
No groundwater encountered during investigation.

Boring No.: **B-17**

Field Test Legend:
Dilatancy: N - None S - Slow R - Rapid
Toughness: L - Low M - Medium H - High
Plasticity: NP - Non-Plastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High VH - Very High

NOTES: 1.) "ppd" denotes soil sample average diametral pocket penetrometer reading. 2.) "ppa" denotes soil sample average axial pocket penetrometer reading.
3.) Maximum Particle Size is determined by direct observation within limitations of sampler size. 4.) Soil identifications and field tests based on visual-manual methods per ASTM D2488.

MOTT MACDONALD M M

SOIL BORING LOG

BORING NO.: **B-18**
Page **1** of **1**

Project:	Powell Creek Solar	**Project No.:**	513385046-071
Location:	Miller City, OH	**Project Mgr:**	Eric Pauli
Client:	Avangrid Renewables	**Field Eng. Staff:**	Yuta Nakamura
Drilling Co.:	Ohio TestBor Inc.	**Date/Time Started:**	May 13, 2020 at 1:00 pm
Driller/Helper:	John Minchak /Keith Gibel	**Date/Time Finished:**	May 13, 2020 at 1:55 pm

Elevation: Grade ft. **Vertical Datum:** | **Boring Location:** See Boring Location Plan | **Coord.:** **Lat:** 41.08946 **Long:** -84.13 | **Horizontal Datum:** NAD 1983

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	-
Length	5 ft	2 ft	-
Inside Dia. (in.)	4.25	1.375	-
Hammer Wt. (lb.)	140	140	-
Hammer Fall (in.)	30	30	-

Rig Make & Model: Diedrich D-50

☐ Truck ☐ Tripod ☐ Cat-Head
☐ ATV ☐ Geoprobe ☑ Winch
☑ Track ☐ Air Track ☐ Roller Bit
☐ Skid ☐ _____ ☑ Cutting Head

Hammer Type: ☐ Safety ☐ Doughnut ☑ Automatic ☐ _____

Drilling Fluid: ☐ Bentonite ☐ Polymer ☐ Water ☑ None

Drill Rod Size:

Casing Advance: Hollow Stem Auger

Depth/ Elev. (ft)	Sample No. / Interval (ft)	Rec. (in)	Sample Blows per 6"	Stratum Graphic	USCS Group Symbol	Visual - Manual Identification & Description (Density/consistency, color, Group Name, constituents, particle size, structure, moisture, optional descriptions, geologic interpretation, Symbol)	Field Tests: Dilatancy	Toughness	Plasticity	Dry Strength	Remarks
	S-1 0.0'- 2.0'	22	1 2 3 4		CL	Medium stiff, brown and gray CLAY, trace medium to fine Sand, dry (CL)	N	M	M	M	PP = 2.0 tsf TV = 0.3 tsf
	S-2 2.0'- 4.0'	21	3 7 11 14		CL	Very stiff, brown CLAY, trace medium to fine Sand, dry (CL)	N	H	M	H	PP = 4.5 tsf TV = 0.8 tsf
	S-3 4.0'- 6.0'	24	4 6 8 11		CL	Stiff, brown CLAY, dry (CL)	N	M	M	M	PP = 4.5 tsf TV = 0.4 tsf
5											
	S-4 6.0'- 8.0'	24	7 10 13 16		CL	Very stiff, brown CLAY, dry (CL)	N	H	M	M	PP > 4.5 tsf TV = 1.5 tsf
	S-5 8.0'- 10.0'	24	5 7 10 14		CL	Very stiff, brown CLAY, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.1 tsf
10											
	S-6 13.0'- 15.0'	24	3 7 10 12		CL	Very stiff, brown CLAY, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.0 tsf
15											
						16.5					
	S-7 18.0'- 20.0'	24	4 6 8 11		CH	Stiff, dark brown CLAY, dry (CH)	N	M	H	H	PP = 4.0 tsf TV = 1.0 tsf
						End of Boring at 20 feet BGS.					
						20.0 Borehole backfilled with soil cuttings.					

Water Level Data

Date	Time	Elapsed Time (hr)	Depth in feet to: Bot. of Casing	Bottom of Hole	Water

Sample Type

O Open End Rod
T Thin-Wall Tube
U Undisturbed Sample
SS Split Spoon Sample
G Grab Sample

Notes:

PP = Pocket Penetrometer
TV = Torvane
No groundwater encountered during investigation.

Boring No.: **B-18**

Field Test Legend:
Dilatancy: N - None S - Slow R - Rapid
Toughness: L - Low M - Medium H - High
Plasticity: NP - Non-Plastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High VH - Very High

NOTES: 1.) "ppd" denotes soil sample average diametral pocket penetrometer reading. 2.) "ppa" denotes soil sample average axial pocket penetrometer reading.
3.) Maximum Particle Size is determined by direct observation within limitations of sampler size. 4.) Soil identifications and field tests based on visual-manual methods per ASTM D2488.

MOTT MACDONALD M M

SOIL BORING LOG

BORING NO.: **B-19**
Page **1** of **1**

Project:	Powell Creek Solar	**Project No.:**	513385046-071
Location:	Miller City, OH	**Project Mgr:**	Eric Pauli
Client:	Avangrid Renewables	**Field Eng. Staff:**	Yuta Nakamura
Drilling Co.:	Ohio TestBor Inc.	**Date/Time Started:**	May 13, 2020 at 2:15 pm
Driller/Helper:	John Minchak /Keith Gibel	**Date/Time Finished:**	May 13, 2020 at 2:55 pm

Elevation: Grade ft. **Vertical Datum:** | **Boring Location:** See Boring Location Plan | **Coord.:** **Lat:** 41.09040 **Long:** -84.13226 | **Horizontal Datum:** NAD 1983

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	-
Length	5 ft	2 ft	-
Inside Dia. (in.)	4.25	1.375	-
Hammer Wt. (lb.)	140	140	-
Hammer Fall (in.)	30	30	-

Rig Make & Model: Diedrich D-50

☐ Truck ☐ Tripod ☐ Cat-Head
☐ ATV ☐ Geoprobe ☑ Winch
☑ Track ☐ Air Track ☐ Roller Bit
☐ Skid ☐ _____ ☑ Cutting Head

Hammer Type: ☐ Safety ☐ Doughnut ☑ Automatic ☐ _____

Drilling Fluid: ☐ Bentonite ☐ Polymer ☐ Water ☑ None

Drill Rod Size:

Casing Advance: Hollow Stem Auger

Depth/ Elev. (ft)	Sample No. / Interval (ft)	Rec. (in)	Sample Blows per 6"	Stratum Graphic	USCS Group Symbol	Visual - Manual Identification & Description (Density/consistency, color, Group Name, constituents, particle size, structure, moisture, optional descriptions, geologic interpretation, Symbol)	Field Tests: Dilatancy	Toughness	Plasticity	Dry Strength	Remarks
	S-1 0.0'- 2.0'	20	2 2 3 4		CL	Medium stiff, brown and gray CLAY, trace medium to fine Sand, dry (CL)	N	M	M	M	PP = 3.5 tsf TV = 0.5 tsf
						2.0					
	S-2 2.0'- 4.0'	19	5 6 9 12		CH	Very stiff, brown and gray CLAY, dry (CH)	N	M	H	M	PP = 4.0 tsf TV = 0.7 tsf
						4.0					
	S-3 4.0'- 6.0'	24	3 6 9 14		CL	Very stiff, brown CLAY, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.0 tsf
5											
	S-4 6.0'- 8.0'	23	5 6 9 11		CL	Very stiff, brown CLAY, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.0 tsf
	S-5 8.0'- 10.0'	24	4 7 9 15		CL	Very stiff, brown CLAY, trace medium to fine Sand, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 0.9 tsf Occasional Sand partings.
10											
	S-6 13.0'- 15.0'	24	4 7 11 13		CL	Very stiff, brown CLAY, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.5 tsf
15											
						16.5					
	S-7 18.0'- 20.0'	24	3 5 7 9		CH	Stiff, dark brown CLAY, dry (CL)	N	H	H	H	PP = 3.5 tsf TV = 1.1 tsf
						End of Boring at 20 feet BGS.					
						20.0 Borehole backfilled with soil cuttings.					

Water Level Data

Date	Time	Elapsed Time (hr)	Depth in feet to: Bot. of Casing	Bottom of Hole	Water

Sample Type

O Open End Rod
T Thin-Wall Tube
U Undisturbed Sample
SS Split Spoon Sample
G Grab Sample

Notes:

PP = Pocket Penetrometer
TV = Torvane
No groundwater encountered during investigation.

Boring No.: **B-19**

Field Test Legend:
Dilatancy: N - None S - Slow R - Rapid
Toughness: L - Low M - Medium H - High
Plasticity: NP - Non-Plastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High VH - Very High

NOTES: 1.) "ppd" denotes soil sample average diametral pocket penetrometer reading. 2.) "ppa" denotes soil sample average axial pocket penetrometer reading.
3.) Maximum Particle Size is determined by direct observation within limitations of sampler size. 4.) Soil identifications and field tests based on visual-manual methods per ASTM D2488.

MOTT MACDONALD M M

SOIL BORING LOG

BORING NO.: **B-20**

Page **1** of **1**

Project:	Powell Creek Solar	**Project No.:**	513385046-071
Location:	Miller City, OH	**Project Mgr:**	Eric Pauli
Client:	Avangrid Renewables	**Field Eng. Staff:**	Yuta Nakamura
Drilling Co.:	Ohio TestBor Inc.	**Date/Time Started:**	May 13, 2020 at 9:40 am
Driller/Helper:	John Minchak /Keith Gibel	**Date/Time Finished:**	May 13, 2020 at 10:20 am

Elevation: Grade ft. **Vertical Datum:**

Boring Location: See Boring Location Plan

Coord.: **Lat:** 41.09256 **Long:** -84.12818

Horizontal Datum: NAD 1983

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	-
Length	5 ft	2 ft	-
Inside Dia. (in.)	4.25	1.375	-
Hammer Wt. (lb.)	140	140	-
Hammer Fall (in.)	30	30	-

Rig Make & Model: Diedrich D-50

☐ Truck ☐ Tripod ☐ Cat-Head
☐ ATV ☐ Geoprobe ☑ Winch
☑ Track ☐ Air Track ☐ Roller Bit
☐ Skid ☐ _____ ☑ Cutting Head

Hammer Type
☐ Safety
☐ Doughnut
☑ Automatic
☐ _____

Drilling Fluid
☐ Bentonite
☐ Polymer
☐ Water
☑ None

Drill Rod Size:

Casing Advance
Hollow Stem Auger

Depth/ Elev. (ft)	Sample No. / Interval (ft)	Rec. (in)	Sample Blows per 6"	Stratum Graphic	USCS Group Symbol	Visual - Manual Identification & Description (Density/consistency, color, Group Name, constituents, particle size, structure, moisture, optional descriptions, geologic interpretation, Symbol)	Field Tests: Dilatancy	Toughness	Plasticity	Dry Strength	Remarks
	S-1 0.0'- 2.0'	17	2 2 3 5		CL	Medium stiff, brown and gray CLAY, trace medium to fine Sand, dry (CL)	N	M	M	M	PP = 2.5 tsf TV = 0.2 tsf
	S-2 2.0'- 4.0'	200	3 4 5 8		CL	Stiff, brown and gray CLAY, dry (CL)	N	M	M	M	PP = 2.5 tsf TV = 0.3 tsf
5	S-3 4.0'- 6.0'	24	4 5 6 10		CL	Stiff, brown and gray CLAY, dry (CL)	N	H	M	M	PP > 4.5 tsf TV = 0.8 tsf
	S-4 6.0'- 8.0'	16	5 8 11 14		CL	Very stiff, brown CLAY, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 0.8 tsf
	S-5 8.0'- 10.0'	24	5 6 8 10		CL	Stiff, brown CLAY, some Silt, trace fine Sand, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.7 tsf
10						11.5					
	S-6 13.0'- 15.0'	24	4 5 7 9		CH	Stiff, dark brown CLAY, dry (CH)	N	H	H	H	PP = 4.5 tsf TV = 1.5 tsf
15											
	S-7 18.0'- 20.0'	24	4 5 6 10		CH	Stiff, dark brown CLAY, dry (CH)	N	M	H	H	PP = 3.5 tsf TV = 0.6 tsf
						End of Boring at 20 feet BGS. 20.0 Borehole backfilled with soil cuttings.					

Water Level Data

Date	Time	Elapsed Time (hr)	Depth in feet to: Bot. of Casing	Bottom of Hole	Water

Sample Type

O Open End Rod
T Thin-Wall Tube
U Undisturbed Sample
SS Split Spoon Sample
G Grab Sample

Notes:

PP = Pocket Penetrometer
TV = Torvane
No groundwater encountered during investigation.

Boring No.: **B-20**

Field Test Legend:
Dilatancy: N - None S - Slow R - Rapid
Toughness: L - Low M - Medium H - High
Plasticity: NP - Non-Plastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High VH - Very High

NOTES: 1.) "ppd" denotes soil sample average diametral pocket penetrometer reading. 2.) "ppa" denotes soil sample average axial pocket penetrometer reading.
3.) Maximum Particle Size is determined by direct observation within limitations of sampler size. 4.) Soil identifications and field tests based on visual-manual methods per ASTM D2488.

MOTT MACDONALD M M

SOIL BORING LOG

BORING NO.: **B-21**
Page **1** of **1**

Project:	Powell Creek Solar	**Project No.:**	513385046-071
Location:	Miller City, OH	**Project Mgr:**	Eric Pauli
Client:	Avangrid Renewables	**Field Eng. Staff:**	Yuta Nakamura
Drilling Co.:	Ohio TestBor Inc.	**Date/Time Started:**	May 13, 2020 at 8:30 am
Driller/Helper:	John Minchak /Keith Gibel	**Date/Time Finished:**	May 13, 2020 at 9:15 am

Elevation: Grade ft. **Vertical Datum:** | **Boring Location:** See Boring Location Plan | **Coord.:** **Lat:** 41.08751 **Long:** -84.12756 | **Horizontal Datum:** NAD 1983

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	-
Length	5 ft	2 ft	-
Inside Dia. (in.)	4.25	1.375	-
Hammer Wt. (lb.)	140	140	-
Hammer Fall (in.)	30	30	-

Rig Make & Model: Diedrich D-50

☐ Truck	☐ Tripod	☐ Cat-Head	☐ Safety
☐ ATV	☐ Geoprobe	☑ Winch	☐ Doughnut
☑ Track	☐ Air Track	☐ Roller Bit	☑ Automatic
☐ Skid	☐ _____	☑ Cutting Head	☐ _____

Hammer Type

Drilling Fluid: ☐ Bentonite ☐ Polymer ☐ Water ☑ None

Drill Rod Size:

Casing Advance: Hollow Stem Auger

Depth/ Elev. (ft)	Sample No. / Interval (ft)	Rec. (in)	Sample Blows per 6"	Stratum Graphic	USCS Group Symbol	Visual - Manual Identification & Description (Density/consistency, color, Group Name, constituents, particle size, structure, moisture, optional descriptions, geologic interpretation, Symbol)	Field Tests: Dilatancy	Toughness	Plasticity	Dry Strength	Remarks
	S-1 0.0'- 2.0' 0.5'-'	20	2 3 3 4			0.5 (6") TOPSOIL	-	-	-	-	
					CL	Medium stiff, brown and gray CLAY, trace medium to fine Sand, dry (CL)	N	M	M	M	PP = 3.5 tsf TV = 0.4 tsf
	S-2 2.0'- 4.0'	18	3 4 5 8		CL	Stiff, brown and gray CLAY, dry (CL)	N	M	M	M	PP = 3.5 tsf TV = 0.6 tsf
	S-3 4.0'- 6.0'	23	3 6 6 9		CL	Stiff, brown CLAY, dry (CL)	N	M	M	M	PP > 4.5 tsf TV = 1.0 tsf
5	S-4 6.0'- 8.0'	21	5 8 11 15		CL	Very stiff, brown CLAY, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.6 tsf
	S-5 8.0'- 10.0'	24	4 7 9 16		CL	Very stiff, brown and gray CLAY, some medium to fine Sand, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.2 tsf Occasional Sand partings.
10											
	S-6 13.0'- 15.0'	23	4 7 11 14		CL	Very stiff, brown CLAY, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.8 tsf
15						16.5					
	S-7 18.0'- 20.0'	24	5 7 11 15		CH	Very stiff, brown CLAY, trace medium to fine Sand, dry (CH)	N	H	H	H	PP > 4.5 tsf TV = 1.1 tsf Occasional Sand partings.
						End of Boring at 20 feet BGS. 20.0 Borehole backfilled with soil cuttings.					

Water Level Data

Date	Time	Elapsed Time (hr)	Depth in feet to: Bot. of Casing	Bottom of Hole	Water

Sample Type

- **O** Open End Rod
- **T** Thin-Wall Tube
- **U** Undisturbed Sample
- **SS** Split Spoon Sample
- **G** Grab Sample

Notes:

PP = Pocket Penetrometer
TV = Torvane
No groundwater encountered during investigation.

Boring No.: **B-21**

Field Test Legend:
Dilatancy: N - None S - Slow R - Rapid
Toughness: L - Low M - Medium H - High
Plasticity: NP - Non-Plastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High VH - Very High

NOTES: 1.) "ppd" denotes soil sample average diametral pocket penetrometer reading. 2.) "ppa" denotes soil sample average axial pocket penetrometer reading.
3.) Maximum Particle Size is determined by direct observation within limitations of sampler size. 4.) Soil identifications and field tests based on visual-manual methods per ASTM D2488.

MOTT MACDONALD M M

SOIL BORING LOG

BORING NO.: **B-22**

Page **1** of **1**

Project:	Powell Creek Solar	**Project No.:**	513385046-071
Location:	Miller City, OH	**Project Mgr:**	Eric Pauli
Client:	Avangrid Renewables	**Field Eng. Staff:**	Yuta Nakamura
Drilling Co.:	Ohio TestBor Inc.	**Date/Time Started:**	May 12, 2020 at 5:30 pm
Driller/Helper:	John Minchak /Keith Gibel	**Date/Time Finished:**	May 12, 2020 at 6:10 pm

Elevation: Grade ft. **Vertical Datum:** | **Boring Location:** See Boring Location Plan | **Coord.:** **Lat:** 41.09013 **Long:** -84.12277 | **Horizontal Datum:** NAD 1983

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	-
Length	5 ft	2 ft	-
Inside Dia. (in.)	4.25	1.375	-
Hammer Wt. (lb.)	140	140	-
Hammer Fall (in.)	30	30	-

Rig Make & Model: Diedrich D-50

☐ Truck ☐ Tripod ☐ Cat-Head
☐ ATV ☐ Geoprobe ☑ Winch
☑ Track ☐ Air Track ☐ Roller Bit
☐ Skid ☐ _____ ☑ Cutting Head

Hammer Type: ☐ Safety ☐ Doughnut ☑ Automatic ☐ _____

Drilling Fluid: ☐ Bentonite ☐ Polymer ☐ Water ☑ None

Drill Rod Size:

Casing Advance: Hollow Stem Auger

Depth/ Elev. (ft)	Sample No. / Interval (ft)	Rec. (in)	Sample Blows per 6"	Stratum Graphic	USCS Group Symbol	Visual - Manual Identification & Description (Density/consistency, color, Group Name, constituents, particle size, structure, moisture, optional descriptions, geologic interpretation, Symbol)	Field Tests: Dilatancy	Toughness	Plasticity	Dry Strength	Remarks
	S-1 0.0'- 2.0'	18	2 3 3 5		CL	Medium stiff, brown and gray CLAY, trace medium to fine Sand, dry (CL)	N	M	M	M	PP = 2.5 tsf TV = 0.5 tsf
	S-2 2.0'- 4.0'	20	3 5 8 12		CL	Stiff, brown CLAY, trace medium to fine Sand, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.0 tsf
5	S-3 4.0'- 6.0'	23	4 6 10 13		CL	Very stiff, brown CLAY, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.3 tsf
	S-4 6.0'- 8.0'	18	6 9 12 16		CL	Very stiff, brown CLAY, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.5 tsf
	S-5 8.0'- 10.0'	24	5 6 10 13		CL	Very stiff, brown CLAY, dry (CL)	N	H	M	H	PP = 4.5 tsf TV = 1.5 tsf
10						11.5					
	S-6 13.0'- 15.0'	24	5 6 9 11		CH	Very stiff, dark brown CLAY, dry (CH)	N	H	H	H	PP = 4.0 tsf TV = 1.3 tsf
15											
	S-7 18.0'- 20.0'	24	3 5 8 10		CH	Stiff, dark brown CLAY, dry (CH)	N	M	H	H	PP = 3.5 tsf TV = 1.0 tsf
						End of Boring at 20 feet BGS. Borehole backfilled with soil cuttings. 20.0					

Water Level Data

Date	Time	Elapsed Time (hr)	Depth in feet to: Bot. of Casing	Bottom of Hole	Water

Sample Type

O Open End Rod
T Thin-Wall Tube
U Undisturbed Sample
SS Split Spoon Sample
G Grab Sample

Notes:

PP = Pocket Penetrometer
TV = Torvane
No groundwater encountered during investigation.

Boring No.: **B-22**

Field Test Legend:
Dilatancy: N - None S - Slow R - Rapid
Toughness: L - Low M - Medium H - High
Plasticity: NP - Non-Plastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High VH - Very High

NOTES: 1.) "ppd" denotes soil sample average diametral pocket penetrometer reading. 2.) "ppa" denotes soil sample average axial pocket penetrometer reading.
3.) Maximum Particle Size is determined by direct observation within limitations of sampler size. 4.) Soil identifications and field tests based on visual-manual methods per ASTM D2488.

MOTT MACDONALD M M

SOIL BORING LOG

BORING NO.: **B-23**
Page **1** of **1**

Project:	Powell Creek Solar	**Project No.:**	513385046-071
Location:	Miller City, OH	**Project Mgr:**	Eric Pauli
Client:	Avangrid Renewables	**Field Eng. Staff:**	Yuta Nakamura
Drilling Co.:	Ohio TestBor Inc.	**Date/Time Started:**	May 14, 2020 at 12:25 pm
Driller/Helper:	John Minchak /Keith Gibel	**Date/Time Finished:**	May 14, 2020 at 1:05 pm

Elevation: Grade ft. **Vertical Datum:** | **Boring Location:** See Boring Location Plan | **Coord.:** **Lat:** 41.09230 **Long:** -84.11353 | **Horizontal Datum:** NAD 1983

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	-
Length	5 ft	2 ft	-
Inside Dia. (in.)	4.25	1.375	-
Hammer Wt. (lb.)	140	140	-
Hammer Fall (in.)	30	30	-

Rig Make & Model: Diedrich D-50

☐ Truck ☐ Tripod ☐ Cat-Head
☐ ATV ☐ Geoprobe ☑ Winch
☑ Track ☐ Air Track ☐ Roller Bit
☐ Skid ☐ _____ ☑ Cutting Head

Hammer Type
☐ Safety
☐ Doughnut
☑ Automatic
☐ _____

Drilling Fluid
☐ Bentonite
☐ Polymer
☐ Water
☑ None

Drill Rod Size:

Casing Advance
Hollow Stem Auger

Depth/ Elev. (ft)	Sample No. / Interval (ft)	Rec. (in)	Sample Blows per 6"	Stratum Graphic	USCS Group Symbol	Visual - Manual Identification & Description (Density/consistency, color, Group Name, constituents, particle size, structure, moisture, optional descriptions, geologic interpretation, Symbol)	Field Tests: Dilatancy	Toughness	Plasticity	Dry Strength	Remarks
	S-1 0.0'- 2.0' 0.3'-'	20	3 3 3 3		CL	0.3 (4") TOPSOIL Medium stiff, brown CLAY, trace medium to fine Sand, dry (CL)	- N	- M	- M	- M	 PP > 4.5 tsf TV = 0.3 tsf
	S-2 2.0'- 4.0'	24	2 4 5 9		CL	Stiff, brown CLAY, dry (CL)	N	M	M	M	PP = 3.5 tsf TV = 0.6 tsf
5	S-3 4.0'- 6.0'	24	4 6 8 11		CL	Stiff, brown and gray CLAY, trace coarse to fine Sand, dry (CL)	N	H	M	M	PP > 4.5 tsf TV = 1.0 tsf
	S-4 6.0'- 8.0'	24	5 8 12 17		CL	Very stiff, brown CLAY, trace medium to fine Sand, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.2 tsf Occasional Sand partings.
	S-5 8.0'- 10.0'	24	5 7 11 14		CL	Very stiff, brown CLAY, trace medium to fine Sand, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.0 tsf Occasional Sand partings.
10											
	S-6 13.0'- 15.0'	24	4 6 9 11		CL	Very stiff, brown CLAY, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 0.9 tsf
15						16.5					
	S-7 18.0'- 20.0'	24	4 5 8 11		CH	Stiff, dark brown CLAY, dry (CH) End of Boring at 20 feet BGS. 20.0 Borehole backfilled with soil cuttings.	N	H	H	H	PP = 2.5 tsf TV = 1.1 tsf

Water Level Data

Date	Time	Elapsed Time (hr)	Depth in feet to: Bot. of Casing	Bottom of Hole	Water

Sample Type

O	Open End Rod
T	Thin-Wall Tube
U	Undisturbed Sample
SS	Split Spoon Sample
G	Grab Sample

Notes:
PP = Pocket Penetrometer
TV = Torvane
No groundwater encountered during investigation.

Boring No.: **B-23**

Field Test Legend:
Dilatancy: N - None S - Slow R - Rapid
Toughness: L - Low M - Medium H - High
Plasticity: NP - Non-Plastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High VH - Very High

NOTES: 1.) "ppd" denotes soil sample average diametral pocket penetrometer reading. 2.) "ppa" denotes soil sample average axial pocket penetrometer reading.
3.) Maximum Particle Size is determined by direct observation within limitations of sampler size. 4.) Soil identifications and field tests based on visual-manual methods per ASTM D2488.

MOTT MACDONALD M M

SOIL BORING LOG

BORING NO.: **B-24**
Page **1** of **1**

Project:	Powell Creek Solar	**Project No.:**	513385046-071
Location:	Miller City, OH	**Project Mgr:**	Eric Pauli
Client:	Avangrid Renewables	**Field Eng. Staff:**	Yuta Nakamura
Drilling Co.:	Ohio TestBor Inc.	**Date/Time Started:**	May 27, 2020 at 11:00 am
Driller/Helper:	John Minchak /Keith Gibel	**Date/Time Finished:**	May 27, 2020 at 11:30 am

Elevation: Grade ft. **Vertical Datum:** | **Boring Location:** See Boring Location Plan | **Coord.:** **Lat:** 41.08414 **Long:** -84.12511 | **Horizontal Datum:** NAD 1983

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	-
Length	5 ft	2 ft	-
Inside Dia. (in.)	4.25	1.375	-
Hammer Wt. (lb.)	140	140	-
Hammer Fall (in.)	30	30	-

Rig Make & Model: Diedrich D-50

☐ Truck	☐ Tripod	☐ Cat-Head	
☐ ATV	☐ Geoprobe	☑ Winch	
☑ Track	☐ Air Track	☐ Roller Bit	
☐ Skid	☐ _____	☑ Cutting Head	

Hammer Type: ☐ Safety, ☐ Doughnut, ☑ Automatic, ☐ _____

Drilling Fluid: ☐ Bentonite, ☐ Polymer, ☐ Water, ☑ None

Drill Rod Size:

Casing Advance: Hollow Stem Auger

Depth/ Elev. (ft)	Sample No. / Interval (ft)	Rec. (in)	Sample Blows per 6"	Stratum Graphic	USCS Group Symbol	Visual - Manual Identification & Description (Density/consistency, color, Group Name, constituents, particle size, structure, moisture, optional descriptions, geologic interpretation, Symbol)	Field Tests: Dilatancy	Toughness	Plasticity	Dry Strength	Remarks
	S-1 0.0'- 2.0' 0.5'-'	22	1 2 2 4			0.5 (6") - TOPSOIL	-	-	-	-	
					CL	Medium stiff, brown CLAY, dry (CL)	N	M	M	M	PP = 2.5 tsf TV = 0.5 tsf
	S-2 2.0'- 4.0'	24	3 5 8 13		CL	Stiff, brown CLAY, dry (CL)	N	H	M	M	PP = 4.5 tsf TV = 1.0 tsf
5	S-3 4.0'- 6.0'	24	3 6 8 11		CL	Stiff, brown and gray CLAY, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.1 tsf
	S-4 6.0'- 8.0'	23	3 6 8 12		CL	Stiff, brown and gray CLAY, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.5 tsf
	S-5 8.0'- 10.0'	24	3 5 7 10		CL	Stiff, brown CLAY, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.5 tsf
10											
	S-6 13.0'- 15.0'	24	3 6 8 11		CL	Stiff, brown CLAY, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 0.8 tsf
15											
						16.5					
	S-7 18.0'- 20.0'	24	3 6 7 11		CH	Stiff, dark brown CLAY, dry (CH)	N	H	H	H	PP = 3.0 tsf TV = 0.9 tsf
						End of Boring at 20 feet BGS. 20.0 Borehole backfilled with soil cuttings.					

Water Level Data

Date	Time	Elapsed Time (hr)	Depth in feet to: Bot. of Casing	Bottom of Hole	Water

Sample Type

O	Open End Rod
T	Thin-Wall Tube
U	Undisturbed Sample
SS	Split Spoon Sample
G	Grab Sample

Notes:
PP = Pocket Penetrometer
TV = Torvane
No groundwater encountered during investigation.

Boring No.: **B-24**

Field Test Legend:
Dilatancy: N - None S - Slow R - Rapid
Toughness: L - Low M - Medium H - High
Plasticity: NP - Non-Plastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High VH - Very High

NOTES: 1.) "ppd" denotes soil sample average diametral pocket penetrometer reading. 2.) "ppa" denotes soil sample average axial pocket penetrometer reading.
3.) Maximum Particle Size is determined by direct observation within limitations of sampler size. 4.) Soil identifications and field tests based on visual-manual methods per ASTM D2488.

MOTT MACDONALD M M

SOIL BORING LOG

BORING NO.: **B-25**
Page **1** of **1**

Project:	Powell Creek Solar	**Project No.:**	513385046-071
Location:	Miller City, OH	**Project Mgr:**	Eric Pauli
Client:	Avangrid Renewables	**Field Eng. Staff:**	Yuta Nakamura
Drilling Co.:	Ohio TestBor Inc.	**Date/Time Started:**	May 27, 2020 at 11:50 am
Driller/Helper:	John Minchak /Keith Gibel	**Date/Time Finished:**	May 27, 2020 at 12:25 pm

Elevation: Grade ft. **Vertical Datum:**

Boring Location: See Boring Location Plan

Coord.: **Lat:** 41.081693 **Long:** -84.121320

Horizontal Datum: NAD 1983

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	-
Length	5 ft	2 ft	-
Inside Dia. (in.)	4.25	1.375	-
Hammer Wt. (lb.)	140	140	-
Hammer Fall (in.)	30	30	-

Rig Make & Model: Diedrich D-50

☐ Truck ☐ Tripod ☐ Cat-Head
☐ ATV ☐ Geoprobe ☑ Winch
☑ Track ☐ Air Track ☐ Roller Bit
☐ Skid ☐ _____ ☑ Cutting Head

Hammer Type
☐ Safety
☐ Doughnut
☑ Automatic
☐ _____

Drilling Fluid
☐ Bentonite
☐ Polymer
☐ Water
☑ None

Drill Rod Size:

Casing Advance
Hollow Stem Auger

Depth/ Elev. (ft)	Sample No. / Interval (ft)	Rec. (in)	Sample Blows per 6"	Stratum Graphic	USCS Group Symbol	Visual - Manual Identification & Description (Density/consistency, color, Group Name, constituents, particle size, structure, moisture, optional descriptions, geologic interpretation, Symbol)	Field Tests: Dilatancy	Toughness	Plasticity	Dry Strength	Remarks
	S-1 0.0'- 2.0' 0.5'-'	22	1 2 2 4			0.5 (6") - TOPSOIL	-	-	-	-	
					CL	Medium stiff, gray and brown CLAY, dry (CL)	N	L	M	M	PP = 2.5 tsf TV = 0.3 tsf
	S-2 2.0'- 4.0'	22	3 5 8 11		CL	Stiff, gray and brown CLAY, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.2 tsf
5	S-3 4.0'- 6.0'	23	3 5 7 11		CL	Stiff, gray and brown CLAY, trace coarse to fine Sand, dry (CL)	N	H	M	H	PP = 4.5 tsf TV = 0.8 tsf
	S-4 6.0'- 8.0'	24	4 6 9 12		CL	Very stiff, brown and gray CLAY, trace medium to fine Sand, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.5 tsf Occasional Sand partings.
	S-5 8.0'- 10.0'	24	3 6 7 10		CL	Stiff, brown and gray CLAY, trace medium to fine Sand, dry (CL)	N	H	M	H	PP = 4.5 tsf TV = 1.3 tsf Occasional Sand partings.
10						11.5					
	S-6 13.0'- 15.0'	23	3 5 6 9		CH	Stiff, dark brown CLAY, dry (CH)	N	H	H	H	PP = 3.5 tsf TV = 0.8 tsf
15											
	S-7 18.0'- 20.0'	24	3 5 6 9		CH	Stiff, dark brown CLAY, dry (CH)	N	H	H	H	PP = 2.5 tsf TV = 0.8 tsf
						End of Boring at 20 feet BGS. 20.0 Borehole backfilled with soil cuttings.					

Water Level Data

Date	Time	Elapsed Time (hr)	Depth in feet to: Bot. of Casing	Bottom of Hole	Water

Sample Type

O Open End Rod
T Thin-Wall Tube
U Undisturbed Sample
SS Split Spoon Sample
G Grab Sample

Notes:

PP = Pocket Penetrometer
TV = Torvane
No groundwater encountered during investigation.

Boring No.: **B-25**

Field Test Legend:
Dilatancy: N - None S - Slow R - Rapid
Toughness: L - Low M - Medium H - High
Plasticity: NP - Non-Plastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High VH - Very High

NOTES: 1.) "ppd" denotes soil sample average diametral pocket penetrometer reading. 2.) "ppa" denotes soil sample average axial pocket penetrometer reading.
3.) Maximum Particle Size is determined by direct observation within limitations of sampler size. 4.) Soil identifications and field tests based on visual-manual methods per ASTM D2488.

MOTT MACDONALD M M

SOIL BORING LOG

BORING NO.: **B-26**
Page **1** of **1**

Project:	Powell Creek Solar	**Project No.:**	513385046-071
Location:	Miller City, OH	**Project Mgr:**	Eric Pauli
Client:	Avangrid Renewables	**Field Eng. Staff:**	Yuta Nakamura
Drilling Co.:	Ohio TestBor Inc.	**Date/Time Started:**	May 27, 2020 at 3:00 pm
Driller/Helper:	John Minchak /Keith Gibel	**Date/Time Finished:**	May 27, 2020 at 3:35 pm

Elevation: Grade ft. **Vertical Datum:** | **Boring Location:** See Boring Location Plan | **Coord.:** **Lat:** 41.08696 **Long:** -84.11559 | **Horizontal Datum:** NAD 1983

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	-
Length	5 ft	2 ft	-
Inside Dia. (in.)	4.25	1.375	-
Hammer Wt. (lb.)	140	140	-
Hammer Fall (in.)	30	30	-

Rig Make & Model: Diedrich D-50

☐ Truck ☐ Tripod ☐ Cat-Head
☐ ATV ☐ Geoprobe ☑ Winch
☑ Track ☐ Air Track ☐ Roller Bit
☐ Skid ☐ _____ ☑ Cutting Head

Hammer Type: ☐ Safety ☐ Doughnut ☑ Automatic ☐ _____

Drilling Fluid: ☐ Bentonite ☐ Polymer ☐ Water ☑ None

Drill Rod Size:

Casing Advance: Hollow Stem Auger

Depth/ Elev. (ft)	Sample No. / Interval (ft)	Rec. (in)	Sample Blows per 6"	Stratum Graphic	USCS Group Symbol	Visual - Manual Identification & Description (Density/consistency, color, Group Name, constituents, particle size, structure, moisture, optional descriptions, geologic interpretation, Symbol)	Field Tests: Dilatancy	Toughness	Plasticity	Dry Strength	Remarks
	S-1 0.0'- 2.0' 0.5'-'	13	1 2 2 2			0.5 (6") - TOPSOIL	-	-	-	-	PP = 1.5 tsf TV = 0.3 tsf
					CL	Medium stiff, gray and brown CLAY, dry (CL)	N	M	M	M	PP = 1.5 tsf TV = 0.3 tsf
	S-2 2.0'- 4.0'	24	3 4 5 7		CL	Stiff, brown and gray CLAY, dry (CL)	N	M	M	M	PP = 2.0 tsf TV = 0.3 tsf
	S-3 4.0'- 6.0'	24	3 4 6 8		CL	Stiff, brown and gray CLAY, dry (CL)	N	M	M	M	PP = 2.0 tsf TV = 0.4 tsf
5	S-4 6.0'- 8.0'	24	3 6 8 9		CL	Stiff, brown CLAY, dry (CL)	N	H	M	M	PP = 4.0 tsf TV = 1.1 tsf
	S-5 8.0'- 10.0'	24	3 6 8 11		8.0 CH	Stiff, brown CLAY, dry (CH)	N	H	H	H	PP > 4.5 tsf TV = 1.4 tsf
10											
	S-6 13.0'- 15.0'	24	3 4 6 9		CH	Stiff, dark brown CLAY, dry (CH)	N	H	H	H	PP = 3.5 tsf TV = 0.8 tsf
15											
	S-7 18.0'- 20.0'	24	2 3 5 6		CH	Stiff, dark brown CLAY, moist (CH)	N	M	H	H	PP = 3.0 tsf TV = 0.6 tsf
					20.0	End of Boring at 20 feet BGS. Borehole backfilled with soil cuttings.					

Water Level Data

Date	Time	Elapsed Time (hr)	Depth in feet to: Bot. of Casing	Bottom of Hole	Water

Sample Type

O Open End Rod
T Thin-Wall Tube
U Undisturbed Sample
SS Split Spoon Sample
G Grab Sample

Notes:

PP = Pocket Penetrometer
TV = Torvane
No groundwater encountered during investigation.

Boring No.: **B-26**

Field Test Legend:
Dilatancy: N - None S - Slow R - Rapid
Toughness: L - Low M - Medium H - High
Plasticity: NP - Non-Plastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High VH - Very High

NOTES: 1.) "ppd" denotes soil sample average diametral pocket penetrometer reading. 2.) "ppa" denotes soil sample average axial pocket penetrometer reading.
3.) Maximum Particle Size is determined by direct observation within limitations of sampler size. 4.) Soil identifications and field tests based on visual-manual methods per ASTM D2488.

MOTT MACDONALD M M

SOIL BORING LOG

BORING NO.: **B-27**
Page **1** of **1**

Project:	Powell Creek Solar	**Project No.:**	513385046-071
Location:	Miller City, OH	**Project Mgr:**	Eric Pauli
Client:	Avangrid Renewables	**Field Eng. Staff:**	Yuta Nakamura
Drilling Co.:	Ohio TestBor Inc.	**Date/Time Started:**	May 27, 2020 at 1:55 pm
Driller/Helper:	John Minchak /Keith Gibel	**Date/Time Finished:**	May 27, 2020 at 2:25 pm

Elevation: Grade ft. **Vertical Datum:** | **Boring Location:** See Boring Location Plan | **Coord.:** **Lat:** 41.08252 **Long:** -84.11430 | **Horizontal Datum:** NAD 1983

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	-
Length	5 ft	2 ft	-
Inside Dia. (in.)	4.25	1.375	-
Hammer Wt. (lb.)	140	140	-
Hammer Fall (in.)	30	30	-

Rig Make & Model: Diedrich D-50

☐ Truck ☐ Tripod ☐ Cat-Head
☐ ATV ☐ Geoprobe ☑ Winch
☑ Track ☐ Air Track ☐ Roller Bit
☐ Skid ☐ _____ ☑ Cutting Head

Hammer Type
☐ Safety
☐ Doughnut
☑ Automatic
☐ _____

Drilling Fluid
☐ Bentonite
☐ Polymer
☐ Water
☑ None

Drill Rod Size:

Casing Advance
Hollow Stem Auger

Depth/ Elev. (ft)	Sample No. / Interval (ft)	Rec. (in)	Sample Blows per 6"	Stratum Graphic	USCS Group Symbol	Visual - Manual Identification & Description (Density/consistency, color, Group Name, constituents, particle size, structure, moisture, optional descriptions, geologic interpretation, Symbol)	Field Tests: Dilatancy	Toughness	Plasticity	Dry Strength	Remarks
	S-1 0.0'- 2.0'	17	1 1 2 2			(8") - TOPSOIL	-	-	-	-	PP = 1.5 tsf TV = 0.2 tsf
	0.6'-'				CL	0.6 Soft, brown and gray CLAY, moist (CL)	N	L	M	M	PP = 1.5 tsf TV = 0.2 tsf
	S-2 2.0'- 4.0'	21	3 4 6 9		CL	Stiff, brown and gray CLAY, dry (CL)	N	M	M	M	PP = 3.0 tsf TV = 0.6 tsf
	S-3 4.0'- 6.0'	23	3 4 7 9		CL	Stiff, brown and gray CLAY, trace medium to fine Sand, dry (CL)	N	M	M	M	PP = 2.0 tsf TV = 0.6 tsf
5	S-4 6.0'- 8.0'	23	6 9 11 14		CL	Very stiff, brown CLAY, trace medium to fine Sand, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.1 tsf Occasional Sand partings.
	S-5 8.0'- 10.0'	22	4 5 7 11		CL	Stiff, brown CLAY, trace medium to fine Sand, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.3 tsf Occasional Sand partings.
10											
	S-6 13.0'- 15.0'	24	5 7 10 14		CL	Very stiff, brown CLAY, little Silt, trace fine Sand, trace fine Gravel, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.2 tsf Occasional Sand partings.
15											
						16.5					
	S-7 18.0'- 20.0'	24	4 5 6 9		CH	Stiff, dark brown CLAY, dry (CH)	N	H	H	H	PP = 3.0 tsf TV = 1.0 tsf
						End of Boring at 20 feet BGS. 20.0 Borehole backfilled with soil cuttings.					

Water Level Data

Date	Time	Elapsed Time (hr)	Depth in feet to: Bot. of Casing	Bottom of Hole	Water

Sample Type
O Open End Rod
T Thin-Wall Tube
U Undisturbed Sample
SS Split Spoon Sample
G Grab Sample

Notes:
PP = Pocket Penetrometer
TV = Torvane
No groundwater encountered during investigation.

Boring No.: **B-27**

Field Test Legend:
Dilatancy: N - None S - Slow R - Rapid
Toughness: L - Low M - Medium H - High
Plasticity: NP - Non-Plastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High VH - Very High

NOTES: 1.) "ppd" denotes soil sample average diametral pocket penetrometer reading. 2.) "ppa" denotes soil sample average axial pocket penetrometer reading.
3.) Maximum Particle Size is determined by direct observation within limitations of sampler size. 4.) Soil identifications and field tests based on visual-manual methods per ASTM D2488.

MOTT MACDONALD M M

SOIL BORING LOG

BORING NO.: **B-28**
Page **1** of **1**

Project:	Powell Creek Solar	**Project No.:**	513385046-071
Location:	Miller City, OH	**Project Mgr:**	Eric Pauli
Client:	Avangrid Renewables	**Field Eng. Staff:**	Yuta Nakamura
Drilling Co.:	Ohio TestBor Inc.	**Date/Time Started:**	May 27, 2020 at 5:20 pm
Driller/Helper:	John Minchak /Keith Gibel	**Date/Time Finished:**	May 27, 2020 at 5:50 pm

Elevation: Grade ft. **Vertical Datum:** | **Boring Location:** See Boring Location Plan | **Coord.:** **Lat:** 41.08028 **Long:** -84.10962 | **Horizontal Datum:** NAD 1983

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	-
Length	5 ft	2 ft	-
Inside Dia. (in.)	4.25	1.375	-
Hammer Wt. (lb.)	140	140	-
Hammer Fall (in.)	30	30	-

Rig Make & Model: Diedrich D-50

☐ Truck ☐ Tripod ☐ Cat-Head
☐ ATV ☐ Geoprobe ☑ Winch
☑ Track ☐ Air Track ☐ Roller Bit
☐ Skid ☐ _____ ☑ Cutting Head

Hammer Type: ☐ Safety ☐ Doughnut ☑ Automatic ☐ _____

Drilling Fluid: ☐ Bentonite ☐ Polymer ☐ Water ☑ None

Drill Rod Size:

Casing Advance: Hollow Stem Auger

Depth/ Elev. (ft)	Sample No. / Interval (ft)	Rec. (in)	Sample Blows per 6"	Stratum Graphic	USCS Group Symbol	Visual - Manual Identification & Description (Density/consistency, color, Group Name, constituents, particle size, structure, moisture, optional descriptions, geologic interpretation, Symbol)	Field Tests: Dilatancy	Toughness	Plasticity	Dry Strength	Remarks
	S-1 0.0'- 2.0'	20	1 2 2 3			(8") - TOPSOIL	-	-	-	-	PP = 2.0 tsf TV = 0.3 tsf
	0.6'-'				CL	0.6 Medium stiff, brown and gray CLAY, dry (CL)	N	L	M	M	PP = 2.0 tsf TV = 0.3 tsf
	S-2 2.0'- 4.0'	21	2 4 7 11		CH	2.0 Stiff, brown CLAY, dry (CH)	N	M	H	M	PP = 3.5 tsf TV = 0.6 tsf
	S-3 4.0'- 6.0'	23	3 6 8 9		CL	4.0 Stiff, brown CLAY, dry (CL)	N	H	M	H	PP = 4.5 tsf TV = 0.9 tsf
5	S-4 6.0'- 8.0'	23	3 6 8 10		CL	Stiff, brown CLAY, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.2 tsf
	S-5 8.0'- 10.0'	24	4 6 9 13		CL	Very stiff, brown CLAY, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.3 tsf
10											
	S-6 13.0'- 15.0'	24	4 6 9 11		CL	Very stiff, dark brown CLAY, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.1 tsf
15						16.5					
	S-7 18.0'- 20.0'	24	3 5 6 9		CH	Stiff, dark brown CLAY, dry (CH)	N	H	H	H	PP = 3.0 tsf TV = 0.9 tsf
						End of Boring at 20 feet BGS. 20.0 Borehole backfilled with soil cuttings.					

Water Level Data

Date	Time	Elapsed Time (hr)	Depth in feet to: Bot. of Casing	Bottom of Hole	Water

Sample Type

O Open End Rod
T Thin-Wall Tube
U Undisturbed Sample
SS Split Spoon Sample
G Grab Sample

Notes:

PP = Pocket Penetrometer
TV = Torvane
No groundwater encountered during investigation.

Boring No.: **B-28**

Field Test Legend:
Dilatancy: N - None S - Slow R - Rapid
Toughness: L - Low M - Medium H - High
Plasticity: NP - Non-Plastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High VH - Very High

NOTES: 1.) "ppd" denotes soil sample average diametral pocket penetrometer reading. 2.) "ppa" denotes soil sample average axial pocket penetrometer reading.
3.) Maximum Particle Size is determined by direct observation within limitations of sampler size. 4.) Soil identifications and field tests based on visual-manual methods per ASTM D2488.

MOTT MACDONALD

SOIL BORING LOG

BORING NO.: **B-29**
Page **1** of **1**

Project:	Powell Creek Solar	**Project No.:**	513385046-071
Location:	Miller City, OH	**Project Mgr:**	Eric Pauli
Client:	Avangrid Renewables	**Field Eng. Staff:**	Yuta Nakamura
Drilling Co.:	Ohio TestBor Inc.	**Date/Time Started:**	May 27, 2020 at 4:20 pm
Driller/Helper:	John Minchak /Keith Gibel	**Date/Time Finished:**	May 27, 2020 at 4:50 pm

Elevation: Grade ft. **Vertical Datum:** | **Boring Location:** See Boring Location Plan | **Coord.:** **Lat:** 41.08218 **Long:** -84.10502 | **Horizontal Datum:** NAD 1983

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	-
Length	5 ft	2 ft	-
Inside Dia. (in.)	4.25	1.375	-
Hammer Wt. (lb.)	140	140	-
Hammer Fall (in.)	30	30	-

Rig Make & Model: Diedrich D-50

☐ Truck	☐ Tripod	☐ Cat-Head	
☐ ATV	☐ Geoprobe	☑ Winch	
☑ Track	☐ Air Track	☐ Roller Bit	
☐ Skid	☐ _____	☑ Cutting Head	

Hammer Type: ☐ Safety, ☐ Doughnut, ☑ Automatic, ☐ _____

Drilling Fluid: ☐ Bentonite, ☐ Polymer, ☐ Water, ☑ None

Drill Rod Size:

Casing Advance: Hollow Stem Auger

Depth/ Elev. (ft)	Sample No. / Interval (ft)	Rec. (in)	Sample Blows per 6"	Stratum Graphic	USCS Group Symbol	Visual - Manual Identification & Description (Density/consistency, color, Group Name, constituents, particle size, structure, moisture, optional descriptions, geologic interpretation, Symbol)	Field Tests: Dilatancy	Toughness	Plasticity	Dry Strength	Remarks
	S-1 0.0'- 2.0'	24	1 1 3 4			(12") - TOPSOIL	-	-	-	-	
	1.0'-'				CL	1.0 Brown and gray CLAY, dry (CL)	N	M	M	M	PP = 2.5 tsf TV = 0.3 tsf
	S-2 2.0'- 4.0'	24	3 4 6 10		CL	Stiff, brown and gray CLAY, dry (CL)	N	H	M	M	PP = 3.5 tsf TV = 0.9 tsf
	S-3 4.0'- 6.0'	24	3 5 8 12		CL	Stiff, gray and brown CLAY, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.5 tsf
5	S-4 6.0'- 8.0'	24	5 7 10 14		CL	Very stiff, brown CLAY, trace medium to fine Sand, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.6 tsf
	S-5 8.0'- 10.0'	24	4 8 11 15		CL	Very stiff, brown CLAY, trace medium to fine Sand, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.6 tsf Occasional Sand partings.
10											
	S-6 13.0'- 15.0'	24	4 7 11 15		CL	Very stiff, brown CLAY, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.3 tsf
15											
	S-7 18.0'- 20.0'	24	5 7 12 16		CL	Very stiff, brown CLAY, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.8 tsf
						20.0 End of Boring at 20 feet BGS. Borehole backfilled with soil cuttings.					

Water Level Data

Date	Time	Elapsed Time (hr)	Depth in feet to: Bot. of Casing	Bottom of Hole	Water

Sample Type

O	Open End Rod
T	Thin-Wall Tube
U	Undisturbed Sample
SS	Split Spoon Sample
G	Grab Sample

Notes:
PP = Pocket Penetrometer
TV = Torvane
No groundwater encountered during investigation.

Boring No.: **B-29**

Field Test Legend:
Dilatancy: N - None S - Slow R - Rapid
Toughness: L - Low M - Medium H - High
Plasticity: NP - Non-Plastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High VH - Very High

NOTES: 1.) "ppd" denotes soil sample average diametral pocket penetrometer reading. 2.) "ppa" denotes soil sample average axial pocket penetrometer reading.
3.) Maximum Particle Size is determined by direct observation within limitations of sampler size. 4.) Soil identifications and field tests based on visual-manual methods per ASTM D2488.

MOTT MACDONALD

SOIL BORING LOG

BORING NO.: **B-SS-1**
Page **1** of **1**

Project:	Powell Creek Solar	**Project No.:**	513385046-071
Location:	Miller City, OH	**Project Mgr:**	Eric Pauli
Client:	Avangrid Renewables	**Field Eng. Staff:**	Yuta Nakamura
Drilling Co.:	Ohio TestBor Inc.	**Date/Time Started:**	May 14, 2020 at 11:20 am
Driller/Helper:	John Minchak /Keith Gibel	**Date/Time Finished:**	May 14, 2020 at 12:00 pm

Elevation: Grade ft. **Vertical Datum:** | **Boring Location:** See Boring Location Plan | **Coord.:** **Lat:** 41.09316 **Long:** -84.11941 | **Horizontal Datum:** NAD 1983

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	-
Length	5 ft	2 ft	-
Inside Dia. (in.)	4.25	1.375	-
Hammer Wt. (lb.)	140	140	-
Hammer Fall (in.)	30	30	-

Rig Make & Model: Diedrich D-50

☐ Truck	☐ Tripod	☐ Cat-Head	
☐ ATV	☐ Geoprobe	☑ Winch	
☑ Track	☐ Air Track	☐ Roller Bit	
☐ Skid	☐ _____	☑ Cutting Head	

Hammer Type: ☐ Safety, ☐ Doughnut, ☑ Automatic, ☐ _____

Drilling Fluid: ☐ Bentonite, ☐ Polymer, ☐ Water, ☑ None

Drill Rod Size:

Casing Advance: Hollow Stem Auger

Depth/ Elev. (ft)	Sample No. / Interval (ft)	Rec. (in)	Sample Blows per 6"	Stratum Graphic	USCS Group Symbol	Visual - Manual Identification & Description (Density/consistency, color, Group Name, constituents, particle size, structure, moisture, optional descriptions, geologic interpretation, Symbol)	Field Tests: Dilatancy	Toughness	Plasticity	Dry Strength	Remarks
	S-1 0.0'- 2.0' 0.3'-'	18	2 3 3 4		CL	0.3 (4") TOPSOIL Medium stiff, gray and brown CLAY, dry (CL)	N	M	M	M	PP = 2.0 tsf TV = 0.3 tsf
	S-2 2.0'- 4.0'	22	2 3 5 7		CL	Stiff, brown and gray CLAY, little Silt, trace fine Sand, dry (CL)	N	M	M	M	PP = 3.0 tsf TV = 0.7 tsf
5	S-3 4.0'- 6.0'	23	4 4 7 10		CL	Stiff, brown CLAY, trace medium to fine Sand, dry (CL)	N	H	M	M	PP > 4.5 tsf TV = 0.9 tsf
	S-4 6.0'- 8.0'	24	4 7 11 15		CL	Very stiff, brown CLAY, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.1 tsf
	S-5 8.0'- 10.0'	24	6 8 10 14		CL	Very stiff, brown CLAY, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.6 tsf
10						11.5					
	S-6 13.0'- 15.0'	24	4 6 8 11		CH	Stiff, dark brown CLAY, dry (CH)	N	M	H	H	PP = 4.5 tsf TV = 0.8 tsf
15											
	S-7 18.0'- 20.0'	24	3 4 6 9		CH	Stiff, dark brown CLAY, dry (CH) End of Boring at 20 feet BGS. 20.0 Borehole backfilled with soil cuttings.	-	-	-	-	PP = 2.5 tsf TV = 0.6 tsf

Water Level Data

Date	Time	Elapsed Time (hr)	Depth in feet to: Bot. of Casing	Bottom of Hole	Water

Sample Type

- **O** Open End Rod
- **T** Thin-Wall Tube
- **U** Undisturbed Sample
- **SS** Split Spoon Sample
- **G** Grab Sample

Notes:

PP = Pocket Penetrometer
TV = Torvane
No groundwater encountered during investigation.

Boring No.: **B-SS-1**

Field Test Legend:
Dilatancy: N - None S - Slow R - Rapid
Toughness: L - Low M - Medium H - High
Plasticity: NP - Non-Plastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High VH - Very High

NOTES: 1.) "ppd" denotes soil sample average diametral pocket penetrometer reading. 2.) "ppa" denotes soil sample average axial pocket penetrometer reading.
3.) Maximum Particle Size is determined by direct observation within limitations of sampler size. 4.) Soil identifications and field tests based on visual-manual methods per ASTM D2488.

MOTT MACDONALD M M

SOIL BORING LOG

BORING NO.: **B-SS-2**
Page **1** of **1**

Project:	Powell Creek Solar	**Project No.:**	513385046-071
Location:	Miller City, OH	**Project Mgr:**	Eric Pauli
Client:	Avangrid Renewables	**Field Eng. Staff:**	Yuta Nakamura
Drilling Co.:	Ohio TestBor Inc.	**Date/Time Started:**	May 26, 2020 at 2:40 pm
Driller/Helper:	John Minchak /Keith Gibel	**Date/Time Finished:**	May 26, 2020 at 3:20 pm

Elevation: Grade ft. **Vertical Datum:** | **Boring Location:** See Boring Location Plan | **Coord.:** **Lat:** 41.09943 **Long:** -84.09301 | **Horizontal Datum:** NAD 1983

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	-
Length	5 ft	2 ft	-
Inside Dia. (in.)	4.25	1.375	-
Hammer Wt. (lb.)	140	140	-
Hammer Fall (in.)	30	30	-

Rig Make & Model: Diedrich D-50

☐ Truck	☐ Tripod	☐ Cat-Head	
☐ ATV	☐ Geoprobe	☑ Winch	
☑ Track	☐ Air Track	☐ Roller Bit	
☐ Skid	☐ _____	☑ Cutting Head	

Hammer Type: ☐ Safety, ☐ Doughnut, ☑ Automatic, ☐ _____

Drilling Fluid: ☐ Bentonite, ☐ Polymer, ☐ Water, ☑ None

Drill Rod Size:

Casing Advance: Hollow Stem Auger

Depth/ Elev. (ft)	Sample No. / Interval (ft)	Rec. (in)	Sample Blows per 6"	Stratum Graphic	USCS Group Symbol	Visual - Manual Identification & Description (Density/consistency, color, Group Name, constituents, particle size, structure, moisture, optional descriptions, geologic interpretation, Symbol)	Field Tests: Dilatancy	Toughness	Plasticity	Dry Strength	Remarks
	S-1 0.0'- 2.0' 0.5'-'	23	1 2 2 4			0.5 (6") - TOPSOIL	-	-	-	-	
					CL	Medium stiff, brown and gray CLAY, moist (CL)	N	M	M	M	PP = 2.0 tsf TV = 0.4 tsf
	S-2 2.0'- 4.0'	17	1 3 3 6		CL	Medium stiff, brown and gray CLAY, dry (CL)	N	M	M	M	PP = 2.5 tsf TV = 0.6 tsf
						4.0					
	S-3 4.0'- 6.0'	22	2 4 5 7		CH	Stiff, brown CLAY, dry (CH)	N	H	H	H	PP = 4.0 tsf TV = 0.8 tsf
5						6.0					
	S-4 6.0'- 8.0'	20	3 5 6 11		CL	Stiff, brown CLAY, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.0 tsf
	S-5 8.0'- 10.0'	24	4 6 8 11		CL	Stiff, brown CLAY, dry (CL)	N	H	M	H	PP > 4.5 tsf TV = 1.3 tsf
10						11.5					
	S-6 13.0'- 15.0'	24	3 5 7 10		CH	Stiff, dark brown CLAY, dry (CH)	N	H	H	H	PP = 3.5 tsf TV = 1.0 tsf
15											
	S-7 18.0'- 20.0'	24	3 4 7 10		CH	Stiff, dark brown CLAY, dry (CH)	N	M	H	H	PP = 3.0 tsf TV = 0.8 tsf
						End of Boring at 20 feet BGS. Borehole backfilled with soil cuttings. 20.0					

Water Level Data

Date	Time	Elapsed Time (hr)	Depth in feet to: Bot. of Casing	Bottom of Hole	Water

Sample Type

O	Open End Rod
T	Thin-Wall Tube
U	Undisturbed Sample
SS	Split Spoon Sample
G	Grab Sample

Notes:
PP = Pocket Penetrometer
TV = Torvane
No groundwater encountered during investigation.

Boring No.: **B-SS-2**

Field Test Legend:
Dilatancy: N - None S - Slow R - Rapid
Toughness: L - Low M - Medium H - High
Plasticity: NP - Non-Plastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High VH - Very High

NOTES: 1.) "ppd" denotes soil sample average diametral pocket penetrometer reading. 2.) "ppa" denotes soil sample average axial pocket penetrometer reading.
3.) Maximum Particle Size is determined by direct observation within limitations of sampler size. 4.) Soil identifications and field tests based on visual-manual methods per ASTM D2488.

D. Test Pit Logs

MOTT MACDONALD

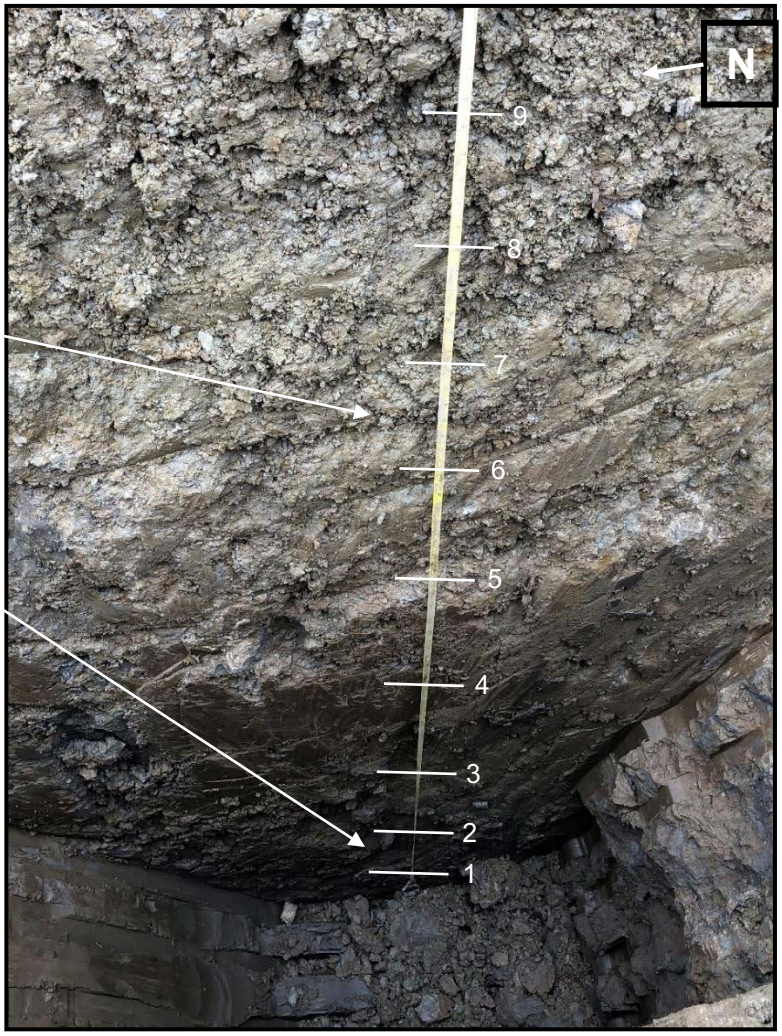
TEST PIT LOG

PROJECT NAME	Avangird – Powell Creek Solar	**TEST PIT NUMBER**	TP-01
PROJECT NUMBER	513385046-071	**MOTT MACDONALD REPRESENTATIVE**	Chris Gibbons
GENERAL LOCATION	Miller City, Ohio	**CONTRACTOR**	Fenson Contracting, LLC.
TIME OPENED	9:45 AM	**TIME CLOSED**	10:25 AM
DEPTH TO WATER (FEET BGS)	Not encountered	**EQUIPMENT**	Komatsu PC78MR
FINAL EXCAVATION DEPTH (FEET BGS)	120 inches (10 feet)	**DATE**	5/29/2020

Test Pit Photo 1 of 1 (0” to 120”)

0-48”
Brownish gray CLAY, little Silt, moist

48-120"
Gray CLAY, trace coarse to fine Gravel, trace Silt



FOOTAGE MARKINGS SHOWN ON PHOTOS REPRESENT TAPE MEASUREMENT VALUES FROM BASE OF EXCAVATION.

MOTT MACDONALD

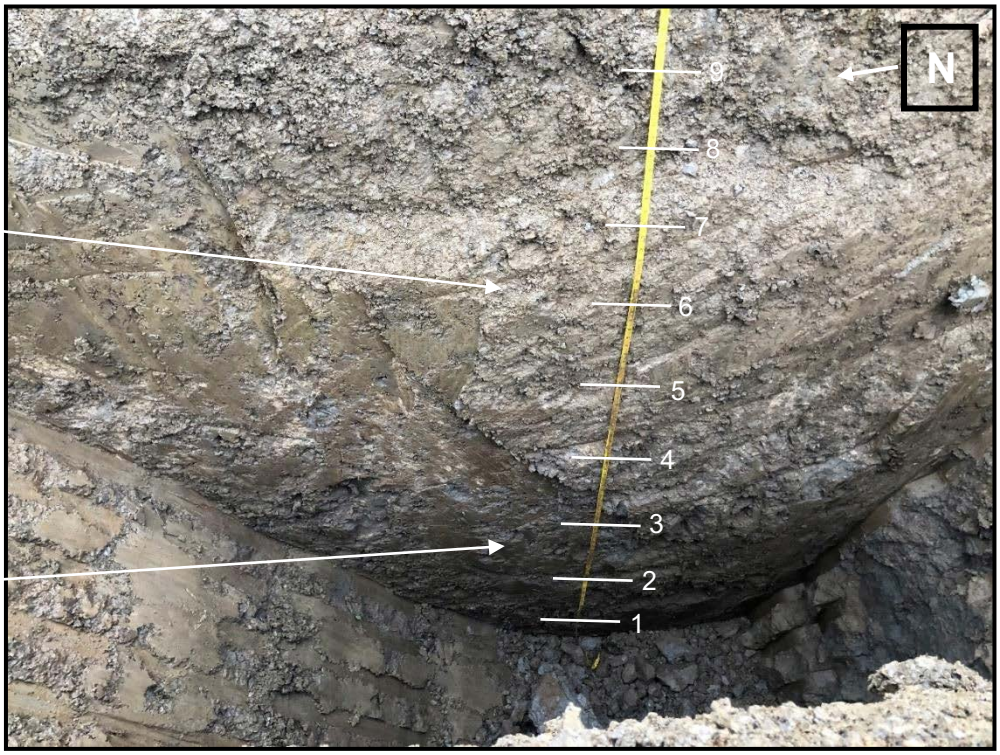
TEST PIT LOG

PROJECT NAME	Avangrid – Powell Creek Solar	**TEST PIT NUMBER**	TP-02
PROJECT NUMBER	513385046-071	**MOTT MACDONALD REPRESENTATIVE**	Chris Gibbons
GENERAL LOCATION	Miller City, Ohio	**CONTRACTOR**	Fenson Contracting, LLC.
TIME OPENED	7:15 AM	**TIME CLOSED**	7:40 AM
DEPTH TO WATER (FEET BGS)	Not encountered	**EQUIPMENT**	Komatsu PC78MR
FINAL EXCAVATION DEPTH (FEET BGS)	120 inches (10 feet)	**DATE**	5/28/2020

Test Pit Photo 1 of 1 (0” to 120”)

0-75”
Grayish brown CLAY, trace Silt, moist

75-120”
Brownish gray CLAY, trace Silt, dry



FOOTAGE MARKINGS SHOWN ON PHOTOS REPRESENT TAPE MEASUREMENT VALUES FROM BASE OF EXCAVATION.

MOTT MACDONALD

TEST PIT LOG

PROJECT NAME	Avangrid – Powell Creek Solar	**TEST PIT NUMBER**	TP-03
PROJECT NUMBER	513385046-071	**MOTT MACDONALD REPRESENTATIVE**	Chris Gibbons
GENERAL LOCATION	Miller City, Ohio	**CONTRACTOR**	Fenson Contracting, LLC.
TIME OPENED	7:50 AM	**TIME CLOSED**	8:25 AM
DEPTH TO WATER (FEET BGS)	Not encountered	**EQUIPMENT**	Komatsu PC78MR
FINAL EXCAVATION DEPTH (FEET BGS)	119 inches (9.9 feet)	**DATE**	5/28/2020

Test Pit Photo 1 of 1 (0” to 119”)

0-60”
Grayish brown CLAY, trace Silt, moist

60-119”
Brownish gray CLAY, trace Silt, dry

FOOTAGE MARKINGS SHOWN ON PHOTOS REPRESENT TAPE MEASUREMENT VALUES FROM BASE OF EXCAVATION.

MOTT MACDONALD

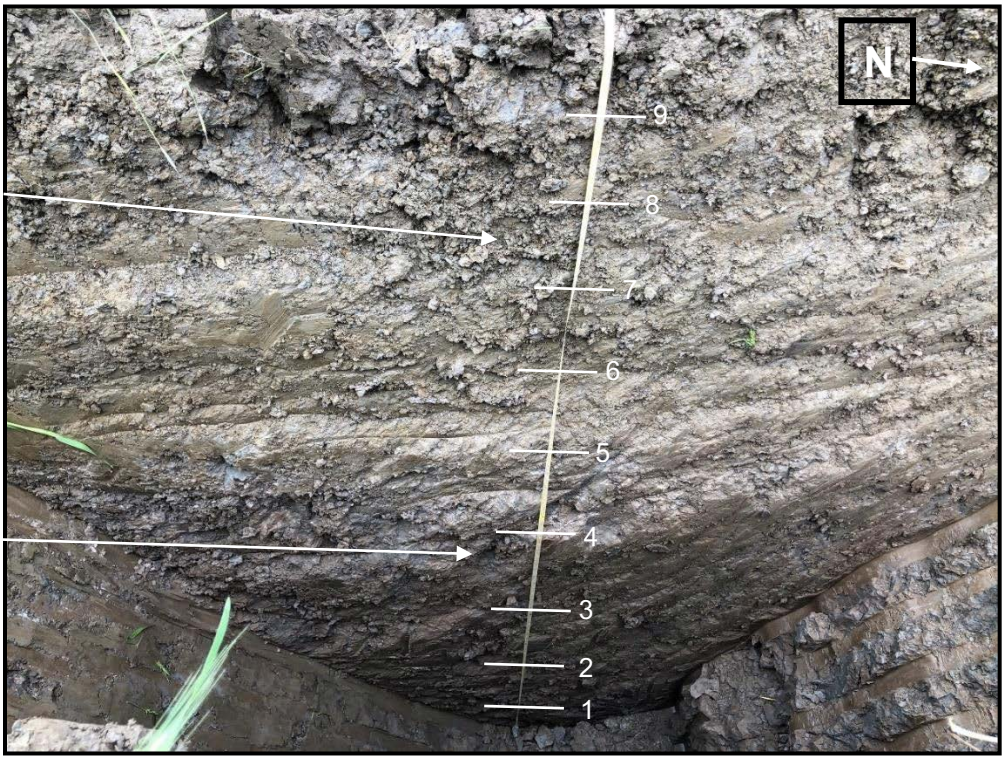
TEST PIT LOG

PROJECT NAME	Avangrid – Powell Creek Solar	**TEST PIT NUMBER**	TP-04
PROJECT NUMBER	513385046-071	**MOTT MACDONALD REPRESENTATIVE**	Chris Gibbons
GENERAL LOCATION	Miller City, Ohio	**CONTRACTOR**	Fenson Contracting, LLC.
TIME OPENED	10:40 AM	**TIME CLOSED**	11:15 PM
DEPTH TO WATER (FEET BGS)	Not encountered	**EQUIPMENT**	Komatsu PC78MR
FINAL EXCAVATION DEPTH (FEET BGS)	120 inches (10 feet)	**DATE**	5/29/2020

Test Pit Photo 1 of 1 (0” to 120”)

0-48”
Brownish gray CLAY, trace Silt, moist

48-120”
Gray CLAY, dry



FOOTAGE MARKINGS SHOWN ON PHOTOS REPRESENT TAPE MEASUREMENT VALUES FROM BASE OF EXCAVATION.

MOTT MACDONALD

TEST PIT LOG

PROJECT NAME	Avangrid – Powell Creek Solar	**TEST PIT NUMBER**	TP-05
PROJECT NUMBER	513385046-071	**MOTT MACDONALD REPRESENTATIVE**	Chris Gibbons
GENERAL LOCATION	Miller City, Ohio	**CONTRACTOR**	Fenson Contracting, LLC.
TIME OPENED	8:45 AM	**TIME CLOSED**	9:30 AM
DEPTH TO WATER (FEET BGS)	Not encountered	**EQUIPMENT**	Komatsu PC78MR
FINAL EXCAVATION DEPTH (FEET BGS)	120 inches (10 feet)	**DATE**	5/29/2020

Test Pit Photo 1 of 1 (0” to 120”)

0-24”
Dark brown CLAY, some Silt, moist

24-78”
Brown CLAY, trace Silt, moist `

78-120”
Brownish gray CLAY, trace Silt, moist

FOOTAGE MARKINGS SHOWN ON PHOTOS REPRESENT TAPE MEASUREMENT VALUES FROM BASE OF EXCAVATION.

MOTT MACDONALD

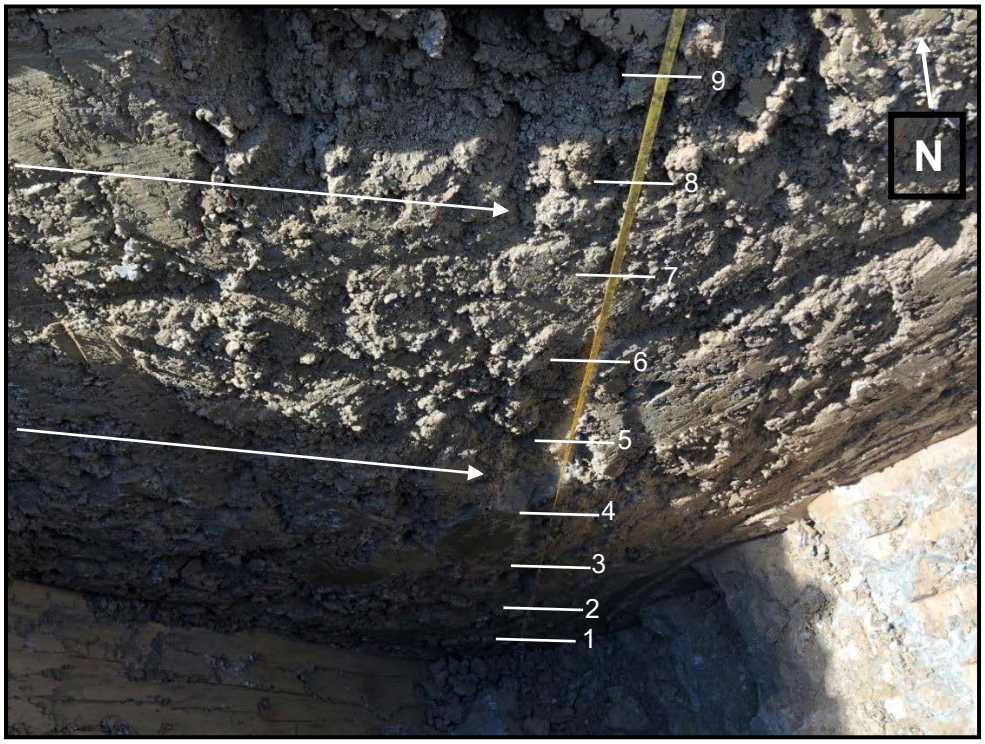
TEST PIT LOG

PROJECT NAME	Avangrid – Powell Creek Solar	**TEST PIT NUMBER**	TP-06
PROJECT NUMBER	513385046-071	**MOTT MACDONALD REPRESENTATIVE**	Chris Gibbons
GENERAL LOCATION	Miller City, Ohio	**CONTRACTOR**	Fenson Contracting, LLC.
TIME OPENED	5:00 PM	**TIME CLOSED**	5:40 PM
DEPTH TO WATER (FEET BGS)	Not encountered	**EQUIPMENT**	Komatsu PC78MR
FINAL EXCAVATION DEPTH (FEET BGS)	120 inches (10 feet)	**DATE**	5/28/2020

Test Pit Photo 1 of 1 (0” to 120”)

0-60”
Brownish gray CLAY, trace Silt, moist

60-120”
Gray CLAY, dry



FOOTAGE MARKINGS SHOWN ON PHOTOS REPRESENT TAPE MEASUREMENT VALUES FROM BASE OF EXCAVATION.

MOTT MACDONALD

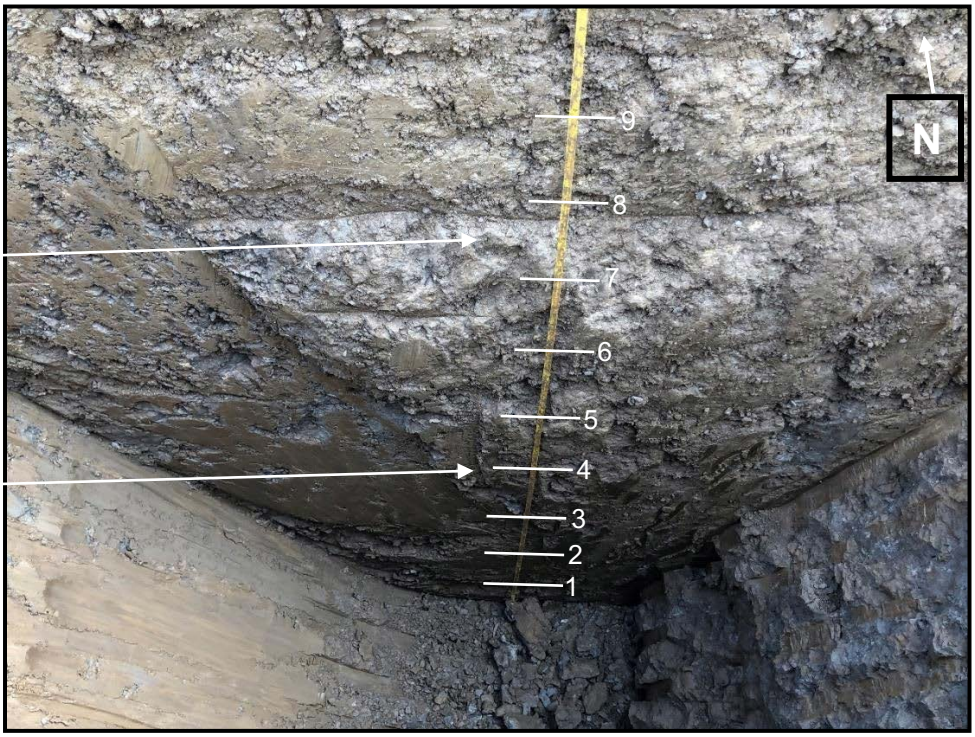
TEST PIT LOG

PROJECT NAME	Avangrid – Powell Creek Solar	**TEST PIT NUMBER**	TP-07
PROJECT NUMBER	513385046-071	**MOTT MACDONALD REPRESENTATIVE**	Chris Gibbons
GENERAL LOCATION	Miller City, Ohio	**CONTRACTOR**	Fenson Contracting, LLC.
TIME OPENED	3:45 PM	**TIME CLOSED**	4:30 PM
DEPTH TO WATER (FEET BGS)	Not encountered	**EQUIPMENT**	Komatsu PC78MR
FINAL EXCAVATION DEPTH (FEET BGS)	120 inches (10 feet)	**DATE**	5/28/2020

Test Pit Photo 1 of 1 (0” to 120”)

0-72”
Brownish gray CLAY, trace Silt, moist

72-120”
Gray CLAY, trace Silt, moist



FOOTAGE MARKINGS SHOWN ON PHOTOS REPRESENT TAPE MEASUREMENT VALUES FROM BASE OF EXCAVATION.

MOTT MACDONALD

TEST PIT LOG

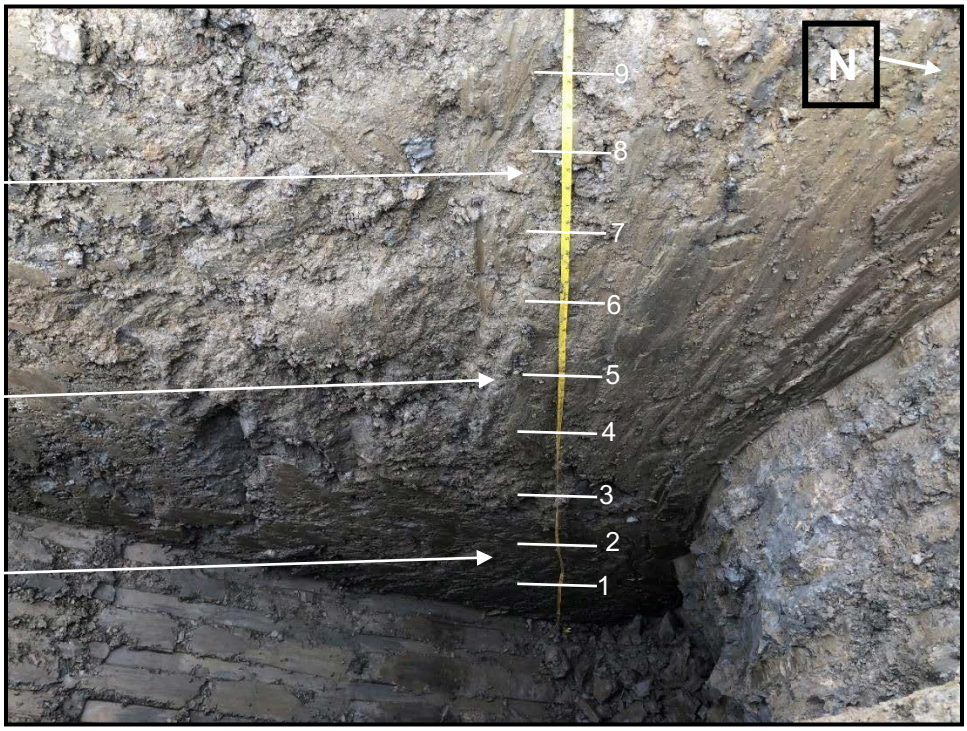
PROJECT NAME	Avangrid – Powell Creek Solar	**TEST PIT NUMBER**	TP-08
PROJECT NUMBER	513385046-071	**MOTT MACDONALD REPRESENTATIVE**	Chris Gibbons
GENERAL LOCATION	Miller City, Ohio	**CONTRACTOR**	Fenson Contracting, LLC.
TIME OPENED	8:45 AM	**TIME CLOSED**	9:20 AM
DEPTH TO WATER (FEET BGS)	Not encountered	**EQUIPMENT**	Komatsu PC78MR
FINAL EXCAVATION DEPTH (FEET BGS)	122 inches (10.2 feet)	**DATE**	5/28/2020

Test Pit Photo 1 of 1 (0” to 122”)

0-65”
Grayish brown CLAY, little Silt, moist

65-100”
Gray CLAY, dry

100-122”
Dark gray CLAY, trace Silt, dry



FOOTAGE MARKINGS SHOWN ON PHOTOS REPRESENT TAPE MEASUREMENT VALUES FROM BASE OF EXCAVATION.

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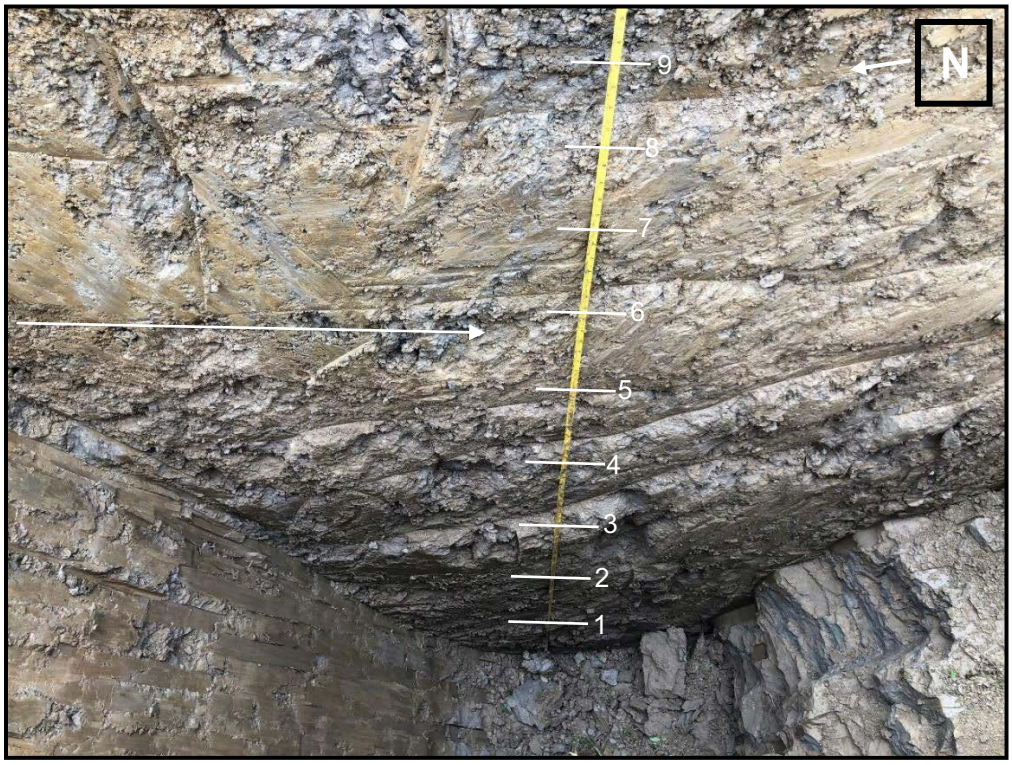
MOTT MACDONALD

TEST PIT LOG

PROJECT NAME	Avangrid – Powell Creek Solar	**TEST PIT NUMBER**	TP-09
PROJECT NUMBER	513385046-071	**MOTT MACDONALD REPRESENTATIVE**	Chris Gibbons
GENERAL LOCATION	Miller City, Ohio	**CONTRACTOR**	Fenson Contracting, LLC.
TIME OPENED	11:25 AM	**TIME CLOSED**	12:05 PM
DEPTH TO WATER (FEET BGS)	Not encountered	**EQUIPMENT**	Komatsu PC78MR
FINAL EXCAVATION DEPTH (FEET BGS)	125 inches (10.4 feet)	**DATE**	5/28/2020

Test Pit Photo 1 of 1 (0” to 125”)

0-125”
Brownish gray CLAY, trace Silt, moist



FOOTAGE MARKINGS SHOWN ON PHOTOS REPRESENT TAPE MEASUREMENT VALUES FROM BASE OF EXCAVATION.

MOTT MACDONALD

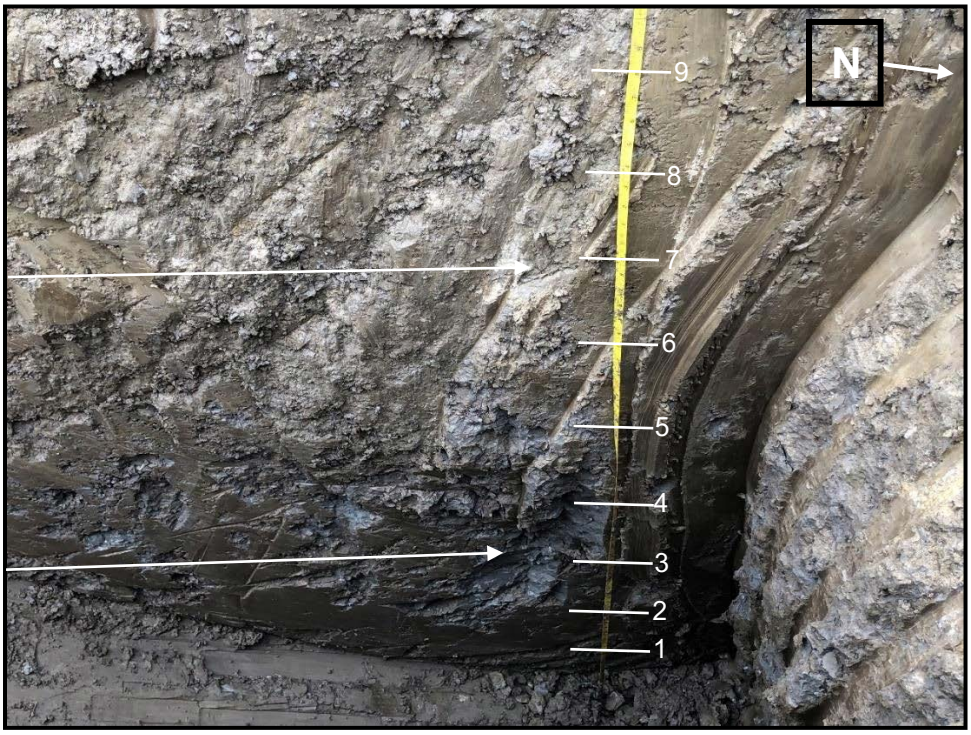
TEST PIT LOG

PROJECT NAME	Avangrid – Powell Creek Solar	**TEST PIT NUMBER**	TP-10
PROJECT NUMBER	513385046-071	**MOTT MACDONALD REPRESENTATIVE**	Chris Gibbons
GENERAL LOCATION	Miller City, Ohio	**CONTRACTOR**	Fenson Contracting, LLC.
TIME OPENED	10:00 AM	**TIME CLOSED**	10:45 AM
DEPTH TO WATER (FEET BGS)	Not encountered	**EQUIPMENT**	Komatsu PC78MR
FINAL EXCAVATION DEPTH (FEET BGS)	120 inches (10 feet)	**DATE**	5/28/2020

Test Pit Photo 1 of 1 (0” to 120”)

0-80”
Grayish brown CLAY, trace Silt, moist

80-120"
Gray CLAY, trace fine Sand, trace Silt, dry



FOOTAGE MARKINGS SHOWN ON PHOTOS REPRESENT TAPE MEASUREMENT VALUES FROM BASE OF EXCAVATION.

10 and 11 have the same picture

MOTT MACDONALD

TEST PIT LOG

PROJECT NAME	Avangrid – Powell Creek Solar	**TEST PIT NUMBER**	TP-11
PROJECT NUMBER	513385046-071	**MOTT MACDONALD REPRESENTATIVE**	Chris Gibbons
GENERAL LOCATION	Miller City, Ohio	**CONTRACTOR**	Fenson Contracting, LLC.
TIME OPENED	2:35 PM	**TIME CLOSED**	3:10 PM
DEPTH TO WATER (FEET BGS)	Not encountered	**EQUIPMENT**	Komatsu PC78MR
FINAL EXCAVATION DEPTH (FEET BGS)	120 inches (10 feet)	**DATE**	5/28/2020

Test Pit Photo 1 of 1 (0” to 120”)

0-70”
Dark brown CLAY, little Silt, moist

70-120”
Gray CLAY, trace Silt, dry

FOOTAGE MARKINGS SHOWN ON PHOTOS REPRESENT TAPE MEASUREMENT VALUES FROM BASE OF EXCAVATION.

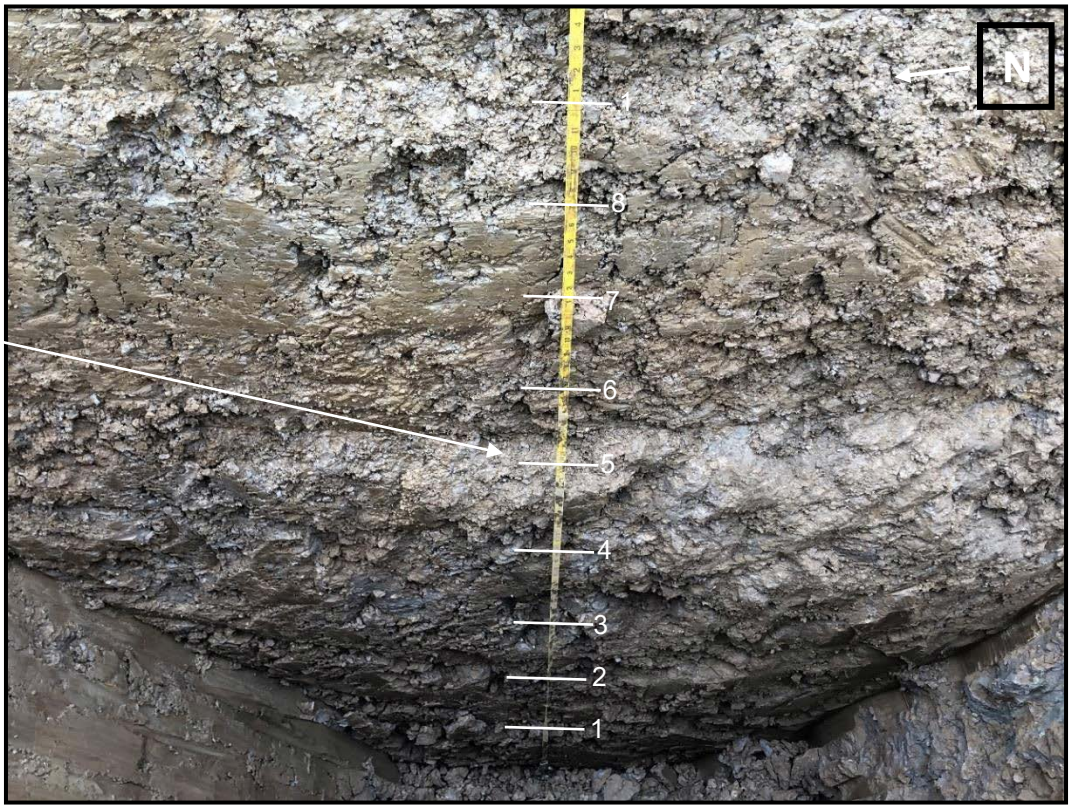
MOTT MACDONALD

TEST PIT LOG

PROJECT NAME	Avangrid – Powell Creek Solar	**TEST PIT NUMBER**	TP-12
PROJECT NUMBER	513385046-071	**MOTT MACDONALD REPRESENTATIVE**	Chris Gibbons
GENERAL LOCATION	Miller City, Ohio	**CONTRACTOR**	Fenson Contracting, LLC.
TIME OPENED	12:30 PM	**TIME CLOSED**	1:20 PM
DEPTH TO WATER (FEET BGS)	Not encountered	**EQUIPMENT**	Komatsu PC78MR
FINAL EXCAVATION DEPTH (FEET BGS)	118 inches (9.8 feet)	**DATE**	5/28/2020

Test Pit Photo 1 of 1 (0” to 118”)

0-118”
Brownish gray CLAY, trace Silt, moist



FOOTAGE MARKINGS SHOWN ON PHOTOS REPRESENT TAPE MEASUREMENT VALUES FROM BASE OF EXCAVATION.

MOTT MACDONALD

TEST PIT LOG

PROJECT NAME	Avangrid – Powell Creek Solar	**TEST PIT NUMBER**	TP-13
PROJECT NUMBER	513385046-071	**MOTT MACDONALD REPRESENTATIVE**	Chris Gibbons
GENERAL LOCATION	Miller City, Ohio	**CONTRACTOR**	Fenson Contracting, LLC.
TIME OPENED	1:55 PM	**TIME CLOSED**	2:25 PM
DEPTH TO WATER (FEET BGS)	Not encountered	**EQUIPMENT**	Komatsu PC78MR
FINAL EXCAVATION DEPTH (FEET BGS)	120 inches (10 feet)	**DATE**	5/28/2020

Test Pit Photo 1 of 1 (0” to 120”)

0-60"
Grayish brown CLAY, trace fine Sand, trace Silt, moist

60-120”
Brownish gray CLAY, trace Silt, moist

MOTT MACDONALD

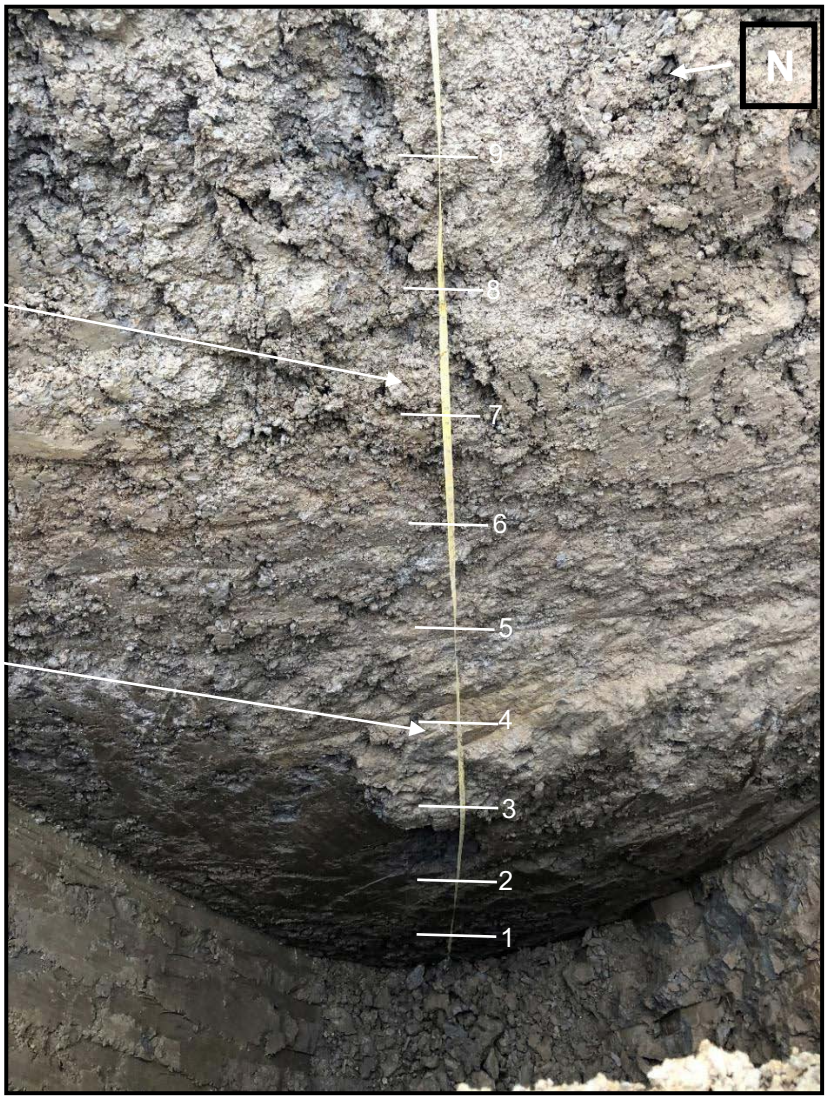
TEST PIT LOG

PROJECT NAME	Avangrid – Powell Creek Solar	**TEST PIT NUMBER**	TP-14
PROJECT NUMBER	513385046-071	**MOTT MACDONALD REPRESENTATIVE**	Chris Gibbons
GENERAL LOCATION	Miller City, Ohio	**CONTRACTOR**	Fenson Contracting, LLC.
TIME OPENED	7:30 AM	**TIME CLOSED**	8:15 AM
DEPTH TO WATER (FEET BGS)	Not encountered	**EQUIPMENT**	Komatsu PC78MR
FINAL EXCAVATION DEPTH (FEET BGS)	120 inches (10 feet)	**DATE**	5/29/2020

Test Pit Photo 1 of 1 (0” to 120”)

0-48”
Dark brown CLAY, trace Silt, moist

48-120”
Brownish gray CLAY, dry



FOOTAGE MARKINGS SHOWN ON PHOTOS REPRESENT TAPE MEASUREMENT VALUES FROM BASE OF EXCAVATION.

Summary: Application Exhibit H - Geotechnical Report (Part 2 of 3) electronically filed by Teresa Orahood on behalf of Dylan F. Borchers