140 West Main Street
High Bridge, NJ 08829
T: 908.238.0544 F: 908.238.9572
Clinton | Asbury Park | Denville | Philadelphia

Municipality: Clinton Block: 18 Lot: 5

Soil Log and Interpretation

1 Soil Log #: SL-1 Date of Soil Log: 12/22/20 Method: Profile Pit

2 Log:

Depth (inches)	Munsell Color Name & Symbol; Estimated Textural Class; Estimated Volume % Coarse Fragments; Structure; Consistence; Mottling Abundance, Size and Contrast
0 - 11"	Topsoil
11 - 48"	7.5YR 5/6; Loam Sand; 5% Gravel; Mottling @ 46-66" 7.5YR4/2 in Color, Many, Coarse, Prominent; SAB, Moist, Friable
48 - 120"	7.5YR 4/4; Sandy Clay Loam; 5% Gravel, 2% Cobble, 1% Stone; SAB, Moist, Friable

3 Ground Water Observations:

_____ Seepage Observed - Depth (inches): _____

_____ Pit Flooded - Depth (inches): _____ after _____ hours of observation

4 Soil Limiting Zones (Check ALL applicable categories):

_____ Fractured Rock Substratum - Depth to Top: _____

_____ Massive Rock Substratum - Depth to Top: _____

_____ Excessively Coarse Horizon - Depth Top to Bottom: _____

_____ Excessively Coarse Substratum - Depth to Top: _____

_____ Hydraulically Restrictive Horizon - Depth Top to Bottom: _____

_____ Hydraulically Restrictive Substratum - Depth to Top: _____

_____ Perched Zone of Saturation - Depth Top to Bottom: _____

_____ Regional Zone of Saturation - Depth to Top: _____

5 I hereby certify that the information furnished on this form is true and accurate. I am aware that falsification of data is a violation of the Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq.) and is subject to penalties as prescribed in N.J.A.C. 7:14-8.

Signature of Site Evaluator: _____ Date: 12/22/2020

Signature and Seal of Professional Engineer: _____

License #: 24GB04258200 Date: _____

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Municipality: Clinton Block: 18 Lot: 5

Soil Log and Interpretation

1 Soil Log #: SL-2 Date of Soil Log: 12/22/20 Method: Profile Pit

2 Log:

Depth (inches)	Munsell Color Name & Symbol; Estimated Textural Class; Estimated Volume % Coarse Fragments; Structure; Consistence; Mottling Abundance, Size and Contrast
0 - 7"	Topsoil
7 - 50"	7.5YR 4/4; Sandy Clay; 5% Gravel, 5% Cobble, 2% Stone; SAB, Moist, Friable
50 - 106"	7.5YR 3/4; Sandy Clay; 10% Gravel, 20% Cobble, 30% Stone; SAB, Saturated, Friable; Machine Refusal @ 106"

3 Ground Water Observations:

_____ Seepage Observed - Depth (inches): _____

_____ Pit Flooded - Depth (inches): _____ after _____ hours of observation

4 Soil Limiting Zones (Check ALL applicable categories):

✓	Fractured Rock Substratum - Depth to Top:	50"
_____	Massive Rock Substratum - Depth to Top:	_____
_____	Excessively Coarse Horizon - Depth Top to Bottom:	_____
_____	Excessively Coarse Substratum - Depth to Top:	_____
_____	Hydraulically Restrictive Horizon - Depth Top to Bottom:	_____
_____	Hydraulically Restrictive Substratum - Depth to Top:	_____
_____	Perched Zone of Saturation - Depth Top to Bottom:	_____
_____	Regional Zone of Saturation - Depth to Top:	_____

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Signature of Site Evaluator: _____ Date: 12/20/2020

Signature and Seal of Professional Engineer: _____

License #: 24GB04258200 Date: _____

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Municipality: Clinton Block: 18 Lot: 5

Soil Log and Interpretation

1 Soil Log #: SL-3 Date of Soil Log: 12/22/20 Method: Profile Pit

2 Log:

Depth (inches)	Munsell Color Name & Symbol; Estimated Textural Class; Estimated Volume % Coarse Fragments; Structure; Consistence; Mottling Abundance, Size and Contrast
0 - 8"	Topsoil
8 - 68"	7.5YR 5/6; Sandy Loam; 2% Gravel; SAB, Moist, Friable; Seepage @ 33"
68 - 120"	7.5YR 4/4; Sandy Clay Loam; 5% Gravel, 5% Cobble, 2% Stone; Mottling @ 76-78 7.5YR 5/8 in Color, Common, Medium, Distinct; SAB, Moist, Friable

3 Ground Water Observations:

☑ Seepage Observed - Depth (inches): 33"

____ Pit Flooded - Depth (inches): ____ after ____ hours of observation

4 Soil Limiting Zones (Check ALL applicable categories):

____ Fractured Rock Substratum - Depth to Top: ____

____ Massive Rock Substratum - Depth to Top: ____

____ Excessively Coarse Horizon - Depth Top to Bottom: ____

____ Excessively Coarse Substratum - Depth to Top: ____

____ Hydraulically Restrictive Horizon - Depth Top to Bottom: ____

____ Hydraulically Restrictive Substratum - Depth to Top: ____

____ Perched Zone of Saturation - Depth Top to Bottom: ____

____ Regional Zone of Saturation - Depth to Top: ____

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Signature of Site Evaluator: _____ Date: 12/20/2020

Signature and Seal of Professional Engineer: _____

License #: 24GB04258200 Date: _____

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Municipality: Clinton Block: 18 Lot: 5

Soil Log and Interpretation

1 Soil Log #: SL-4 Date of Soil Log: 12/22/20 Method: Profile Pit

2 Log:

Depth (inches)	Munsell Color Name & Symbol; Estimated Textural Class; Estimated Volume % Coarse Fragments; Structure; Consistence; Mottling Abundance, Size and Contrast
0 - 7"	Topsoil
7 - 56"	7.5YR 5/6; Sandy Loam; 5% Gravel, 10% Cobble, 5% Stone; SAB, Moist, Friable
56 - 120"	7.5YR 5/8; Sandy Clay Loam; 10% Gravel, 20% Cobble, 15% Stone; Mottling @ 67-78 10YR 5/8 in Color, Many, Coarse, Prominent; SAB, Moist, Friable

3 Ground Water Observations:

_____ Seepage Observed - Depth (inches): _____

_____ Pit Flooded - Depth (inches): _____ after _____ hours of observation

4 Soil Limiting Zones (Check ALL applicable categories):

_____ Fractured Rock Substratum - Depth to Top: _____

_____ Massive Rock Substratum - Depth to Top: _____

_____ Excessively Coarse Horizon - Depth Top to Bottom: _____

_____ Excessively Coarse Substratum - Depth to Top: _____

_____ Hydraulically Restrictive Horizon - Depth Top to Bottom: _____

_____ Hydraulically Restrictive Substratum - Depth to Top: _____

_____ Perched Zone of Saturation - Depth Top to Bottom: _____

_____ Regional Zone of Saturation - Depth to Top: _____

5 I hereby certify that the information furnished on this form is true and accurate. I am aware that falsification of data is a violation of the Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq.) and is subject to penalties as prescribed in N.J.A.C. 7:14-8.

Signature of Site Evaluator: _____ Date: 12/20/2020

Signature and Seal of Professional Engineer: _____

License #: 24GB04258200 Date: _____

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Municipality: Clinton Block: 18 Lot: 5

Soil Log and Interpretation

1 Soil Log #: SL-5 Date of Soil Log: 12/22/20 Method: Profile Pit

2 Log:

Depth (inches)	Munsell Color Name & Symbol; Estimated Textural Class; Estimated Volume % Coarse Fragments; Structure; Consistence; Mottling Abundance, Size and Contrast
0 - 7"	Topsoil
7 - 45"	7.5YR 4/4; Clay Loam; 10% Gravel; SAB, Moist, Friable
45 - 120"	7.5YR 5/4; Clay Loam; 15% Gravel, 10% Cobble, 5% Stone; SAB, Moist, Friable

3 Ground Water Observations:

_____ Seepage Observed - Depth (inches): _____

_____ Pit Flooded - Depth (inches): _____ after _____ hours of observation

4 Soil Limiting Zones (Check ALL applicable categories):

_____ Fractured Rock Substratum - Depth to Top: _____

_____ Massive Rock Substratum - Depth to Top: _____

_____ Excessively Coarse Horizon - Depth Top to Bottom: _____

_____ Excessively Coarse Substratum - Depth to Top: _____

_____ Hydraulically Restrictive Horizon - Depth Top to Bottom: _____

_____ Hydraulically Restrictive Substratum - Depth to Top: _____

_____ Perched Zone of Saturation - Depth Top to Bottom: _____

_____ Regional Zone of Saturation - Depth to Top: _____

5 I hereby certify that the information furnished on this form is true and accurate. I am aware that falsification of data is a violation of the Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq.) and is subject to penalties as prescribed in N.J.A.C. 7:14-8.

Signature of Site Evaluator: _____ Date: 12/20/2020

Signature and Seal of Professional Engineer: _____

License #: 24GB04258200 Date: _____

140 West Main Street
High Bridge, NJ 08829
T: 908.238.0544 F: 908.238.9572

E&LP

APPLICATION FOR PERMIT TO CONSTRUCT/ALTER AN INDIVIDUAL SUBSURFACE SEWAGE DISPOSAL SYSTEM

Municipality: Clinton Block: 18 Lot: 5

Form 3g - Basin Flooding Test Data

1 Test # BF-1 Reference Soil Log SL-2 Date Tested 12/22/20

2 Depth of Pit (ft) 8.83

3 Area of pit (ft^2) 50

4 Description of rock substratum within test zone:

Type of Rock Lime Stone

Name of Formation

Average Fracture Spacing

Type of Fractures

___ Open (wide), clean - width of openings (mm)

X Open (wide), infilled with fines - width of opening (mm)

___ Tight (closed)

Orientation of Fractures:

___ Horizontal (parallel to pit bottom) or nearly so

X Inclined

___ Vertical (parallel to sides of pit) or nearly so

Hardness of Rock:

___ Rippable with hand tools

X Not rippable with hand tools, rippable by machine

___ Not rippable by machine

5 Time/Date of 1st basin flooding 11:03 am 12/22 Volume of water added, gal. 375

6 Result of 1st basin flooding:

X Basin drained within 24 hours - indicate time/date 11:50 am 12/22

___ Basin not drained within 24 hours

7 Time/Date of 2nd basin flooding 12:00 pm 12/22 Volume of water added, gal. 375

8 Result of 2nd basin flooding:

X Basin drained within 24 hours - indicate time/date 12:45 pm 12/22

___ Basin not drained within 24 hours

9 I hereby certify that the information furnished on Form 3g of this application (and the attachments thereto) is true and accurate. I am aware that falsification of data is a violation of the Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq.) and is subject to penalties as prescribed in N.J.A.C. 7:14-8.

Signature of Site Evaluator Date

Signature and Seal of Professional Engineer

License # 24GB042582 Date

Engineering & Land Planning Associates

Project:	Puleo International	Date:	12/22/2020
Location:	13 Moebus Place, Clinton	Sample:	IN PLACE
Test By:	Joey McGinnis		SL-1 @ 48"

L=	6.000	T1=	186
H1=	6.000	T2=	187
H2=	5.000	T3=	186
r=	1.000	T4=	187
R=	1.000	T5=	188
		T(sec.)=	188
		T(min.)=	3.13

Soil Permeability: 20.95

Soil Class: K5

Disturbed	
Tube Weight	734
Gross Weight	1,074
Net Weight	340
Sample Vol. (in³)	18.84
(cm³)	308.7876
Bulk Density	1.101080484
	min. 1.2 gr/cm³

$$K(in/hr) = 60\,\text{min}/hr \times \frac{L(in)}{T(\text{min})} \times \frac{r^2}{R^2} \times \ln\left(\frac{H_1}{H_2}\right)$$ [Equation 4]

Where:

K = permeability of the soil sample, in inches per hour;
L = length of the soil core, in inches;
T = time required for the water level to drop from H_1 to H_2 during the final test interval, in minutes,;
r = radius of the standpipe, in centimeters or inches;
R = radius of the soil core, in the same units as "r";
H_1 = height of the water level above the rim of the test basin at the beginning of each test interval, in inches; and
H_2 = height of the water level above the rim of the test basin at the end of each test interval, in inches.

[Note: When the standpipe is not used, the term r^2/R^2 is omitted from the equation.]

Engineering & Land Planning Associates

Project:	Puleo International	Date:	12/22/2020
Location:	13 Moebus Place, Clinton	Sample:	IN PLACE
Test By:	Joey McGinnis		SL-1 @ 80"

L=	6.000	T1=	265
H1=	6.000	T2=	263
H2=	4.500	T3=	266
r=	1.000	T4=	264
R=	1.000	T5=	263
		T(sec.)=	263
		T(min.)=	4.38

Soil Permeability: 23.63

Soil Class: K5

Disturbed

Tube Weight	695
Gross Weight	1,036
Net Weight	341
Sample Vol. (in³)	18.84
(cm³)	308.7876
Bulk Density	1.104318956
	min. 1.2 gr/cm³

$$K(in/hr) = 60\,\text{min}/hr \times \frac{L(in)}{T(\text{min})} \times \frac{r^2}{R^2} \times \ln\left(\frac{H_1}{H_2}\right)$$ [Equation 4]

Where:

K = permeability of the soil sample, in inches per hour;
L = length of the soil core, in inches;
T = time required for the water level to drop from H_1 to H_2 during the final test interval, in minutes,;
r = radius of the standpipe, in centimeters or inches;
R = radius of the soil core, in the same units as "r";
H_1 = height of the water level above the rim of the test basin at the beginning of each test interval, in inches; and
H_2 = height of the water level above the rim of the test basin at the end of each test interval, in inches.

[Note: When the standpipe is not used, the term r^2/R^2 is omitted from the equation.]

Engineering & Land Planning Associates

Project:	Puleo International	Date:	12/22/2020
Location:	13 Moebus Place, Clinton	Sample:	IN PLACE
Test By:	Joey McGinnis		SL-3 @ 60"

L=	6.000	T1=	196
H1=	6.000	T2=	198
H2=	5.000	T3=	199
r=	1.000	T4=	202
R=	1.000	T5=	200
		T(sec.)=	200
		T(min.)=	3.33

Soil Permeability: 19.69

Soil Class: K5

Disturbed

Tube Weight	695
Gross Weight	1,154
Net Weight	459
Sample Vol. (in³)	18.84
(cm³)	308.7876
Bulk Density	1.486458653
	min. 1.2 gr/cm³

$$K(in/hr) = 60\,\text{min}/hr \times \frac{L(in)}{T(\text{min})} \times \frac{r^2}{R^2} \times \ln\left(\frac{H_1}{H_2}\right)$$ [Equation 4]

Where:

K = permeability of the soil sample, in inches per hour;
L = length of the soil core, in inches;
T = time required for the water level to drop from H_1 to H_2 during the final test interval, in minutes,;
r = radius of the standpipe, in centimeters or inches;
R = radius of the soil core, in the same units as "r";
H_1 = height of the water level above the rim of the test basin at the beginning of each test interval, in inches; and
H_2 = height of the water level above the rim of the test basin at the end of each test interval, in inches.

[Note: When the standpipe is not used, the term r^2/R^2 is omitted from the equation.]

Engineering & Land Planning Associates

Project:	Puleo International	Date:	12/22/2020
Location:	13 Moebus Place, Clinton	Sample:	IN PLACE
Test By:	Joey McGinnis		SL-3 @ 100"

L=	6.000	T1=	220
H1=	6.000	T2=	224
H2=	5.450	T3=	223
r=	1.000	T4=	223
R=	1.000	T5=	222
		T(sec.)=	222
		T(min.)=	3.70

Soil Permeability: 9.35

Soil Class: K4

Disturbed

Tube Weight	700
Gross Weight	1,152
Net Weight	452
Sample Vol. (in³)	18.84
(cm³)	308.7876
Bulk Density	1.463789349
	min. 1.2 gr/cm³

$$K(in/hr) = 60\,\text{min}/hr \times \frac{L(in)}{T(\text{min})} \times \frac{r^2}{R^2} \times \ln\left(\frac{H_1}{H_2}\right)$$ [Equation 4]

Where:

K = permeability of the soil sample, in inches per hour;
L = length of the soil core, in inches;
T = time required for the water level to drop from H_1 to H_2 during the final test interval, in minutes,;
r = radius of the standpipe, in centimeters or inches;
R = radius of the soil core, in the same units as "r";
H_1 = height of the water level above the rim of the test basin at the beginning of each test interval, in inches; and
H_2 = height of the water level above the rim of the test basin at the end of each test interval, in inches.

[Note: When the standpipe is not used, the term r^2/R^2 is omitted from the equation.]

Engineering & Land Planning Associates

Project:	Puleo International	Date:	12/22/2020
Location:	13 Moebus Place, Clinton	Sample:	IN PLACE
Test By:	Joey McGinnis		SL-4 @ 55"

L=	6.000	T1=	321
H1=	6.000	T2=	326
H2=	4.500	T3=	326
r=	1.000	T4=	323
R=	1.000	T5=	325
		T(sec.)=	325
		T(min.)=	5.42

Soil Permeability: 19.12

Soil Class: K4

Disturbed

Tube Weight	700
Gross Weight	1,140
Net Weight	440
Sample Vol. (in³)	18.84
(cm³)	308.7876
Bulk Density	1.424927685
	min. 1.2 gr/cm³

$$K(in/hr) = 60\,\text{min}/hr \times \frac{L(in)}{T(\text{min})} \times \frac{r^2}{R^2} \times \ln\left(\frac{H_1}{H_2}\right)$$ [Equation 4]

Where:

K = permeability of the soil sample, in inches per hour;
L = length of the soil core, in inches;
T = time required for the water level to drop from H_1 to H_2 during the final test interval, in minutes,;
r = radius of the standpipe, in centimeters or inches;
R = radius of the soil core, in the same units as "r";
H_1 = height of the water level above the rim of the test basin at the beginning of each test interval, in inches; and
H_2 = height of the water level above the rim of the test basin at the end of each test interval, in inches.

[Note: When the standpipe is not used, the term r^2/R^2 is omitted from the equation.]

Engineering & Land Planning Associates

Project:	Puleo International	Date:	12/22/2020
Location:	13 Moebus Place, Clinton	Sample:	IN PLACE
Test By:	Joey McGinnis		SL-4 @ 110"

L=	6.000	T1=	265
H1=	6.000	T2=	263
H2=	5.450	T3=	264
r=	1.000	T4=	266
R=	1.000	T5=	265
		T(sec.)=	265
		T(min.)=	4.42

Soil Permeability: 7.84

Soil Class: K4

Disturbed

Tube Weight	700
Gross Weight	1,109
Net Weight	409
Sample Vol. (in³)	18.84
(cm³)	308.7876
Bulk Density	1.324535053
	min. 1.2 gr/cm³

$$K(in/hr) = 60\,\text{min}/hr \times \frac{L(in)}{T(\text{min})} \times \frac{r^2}{R^2} \times \ln\left(\frac{H_1}{H_2}\right)$$ [Equation 4]

Where:

K = permeability of the soil sample, in inches per hour;
L = length of the soil core, in inches;
T = time required for the water level to drop from H_1 to H_2 during the final test interval, in minutes,;
r = radius of the standpipe, in centimeters or inches;
R = radius of the soil core, in the same units as "r";
H_1 = height of the water level above the rim of the test basin at the beginning of each test interval, in inches; and
H_2 = height of the water level above the rim of the test basin at the end of each test interval, in inches.

[Note: When the standpipe is not used, the term r^2/R^2 is omitted from the equation.]

Engineering & Land Planning Associates

Project:	Puleo International	Date:	12/22/2020
Location:	13 Moebus Place, Clinton	Sample:	IN PLACE
Test By:	Joey McGinnis		SL-5 @ 40"

L=	6.000	T1=	197
H1=	6.000	T2=	199
H2=	5.000	T3=	196
r=	1.000	T4=	198
R=	1.000	T5=	198
		T(sec.)=	198
		T(min.)=	3.30

Soil Permeability: 19.89

Soil Class: K4

Disturbed

Tube Weight	700
Gross Weight	1,144
Net Weight	444
Sample Vol. (in³)	18.84
(cm³)	308.7876
Bulk Density	1.437881573
	min. 1.2 gr/cm³

$$K(in/hr) = 60\,\text{min}/hr \times \frac{L(in)}{T(\text{min})} \times \frac{r^2}{R^2} \times \ln\left(\frac{H_1}{H_2}\right)$$ [Equation 4]

Where:

K = permeability of the soil sample, in inches per hour;
L = length of the soil core, in inches;
T = time required for the water level to drop from H_1 to H_2 during the final test interval, in minutes,;
r = radius of the standpipe, in centimeters or inches;
R = radius of the soil core, in the same units as "r";
H_1 = height of the water level above the rim of the test basin at the beginning of each test interval, in inches; and
H_2 = height of the water level above the rim of the test basin at the end of each test interval, in inches.

[Note: When the standpipe is not used, the term r^2/R^2 is omitted from the equation.]

Engineering & Land Planning Associates

Project:	Puleo International	Date:	12/22/2020
Location:	13 Moebus Place, Clinton	Sample:	IN PLACE
Test By:	Joey McGinnis		SL-5 @ 100"

L=	6.000	T1=	245
H1=	6.000	T2=	243
H2=	5.450	T3=	242
r=	1.000	T4=	245
R=	1.000	T5=	245
		T(sec.)=	245
		T(min.)=	4.08

Soil Permeability: 8.48

Soil Class: K4

Disturbed

Tube Weight	700
Gross Weight	1,145
Net Weight	445
Sample Vol. (in³)	18.84
(cm³)	308.7876
Bulk Density	1.441120045
	min. 1.2 gr/cm³

$$K(in/hr) = 60\,\text{min}/hr \times \frac{L(in)}{T(\text{min})} \times \frac{r^2}{R^2} \times \ln\left(\frac{H_1}{H_2}\right)$$ [Equation 4]

Where:

K = permeability of the soil sample, in inches per hour;
L = length of the soil core, in inches;
T = time required for the water level to drop from H_1 to H_2 during the final test interval, in minutes,;
r = radius of the standpipe, in centimeters or inches;
R = radius of the soil core, in the same units as "r";
H_1 = height of the water level above the rim of the test basin at the beginning of each test interval, in inches; and
H_2 = height of the water level above the rim of the test basin at the end of each test interval, in inches.

[Note: When the standpipe is not used, the term r^2/R^2 is omitted from the equation.]