



210 Maple Place, P.O. Box 48, Keyport NJ 07735

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September 19, 2017

3C's Backhoe Service
16 Kentucky Ave.
Middletown, NJ 07748

Attn: Mr. Charlie Diehl

Ref: 61 Highland Ridge Rd., Manalapan, NJ 07726

Dear Mr. Diehl:

On August 04, 2017, a K5/C-33 sand sample was delivered to Key-Tech for Quality Control tests. This submitted sample complied with NJDEP K5 requirement and ASTM C-33 gradation requirement. Attached please find the test reports for Clayton Sand sample #2. The following is the list of the tests performed.

- K-value test
- Sieve Analysis

Our laboratory is inspected and accredited by AASHTO. The required tests were performed in accordance with NJDEP K5 and ASTM C-33 specifications.

Should you have any questions or require additional information, please contact the undersigned at schen@keytechlabs.com or 732 888 8308.

Sincerely,
KEY - TECH



Song Chen, P.E.
Vice President

schen@keytechlabs.com

KEY - TECH

210 Maple Place P.O. Box 48 Keyport, NJ 07735

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CLIENT: Clayton Sand Co.
PROJECT: Jackson - K-5 - C-33
MATERIAL: Beige Med. to Fine SAND, trace Gravel

Date: 8/17/17
Lab #: 265R
Sample #: 2

SOIL PERMEABILITY CLASS RATING DATA

Coarse Fragment Content:

Total Weight of Sample, W.T. 320.0 grams
Weight of Material Retained on 2mm sieve, W.C.F. 24.6 grams
Wt. % Coarse Fragment (W.C.F./W.T. X 100) 7.7%

Oven Dry Weight (24 hrs, 105 °C) of 40 Gram Air Dry Sample, Wt 40.0 grams

Hydrometer Calibration, Rc 4.5
Hydrometer Reading - 40 seconds, R1 5.0 grams
Temperature of Suspension, °F 76.5°F

Corrected Hydrometer Reading, R1' 0.5 grams

Hydrometer Calibration, Rc 4.6
Hydrometer Reading - 2 hours, R2 4.8 grams
Temperature of Suspension, °F 76.0°F

Corrected Hydrometer Reading, R2' 0.2 grams

% Sand = (Wt. - R1')/Wt. x 100 = (40.0 - 0.5) / 40.0 x 100 = 98.8%
% Clay = R2'/Wt. x 100 = 0.2 / 40.0 x 100 = 0.50%

Sieve Analysis:

- Over Dry Wt. (2 hrs., 105 °C) Total Sand Fraction
(Soil Retained in 0.047 mm Sieve) 39.6 grams
- Wt. of Fine Plus Very Fine Sand Fraction
(Sand Passing 0.25 mm Sieve) 4.8 grams
- % Fine Plus Very Fine Sand (b/a) 12.1%

Soil Morphology (Natural Soil Samples Only):

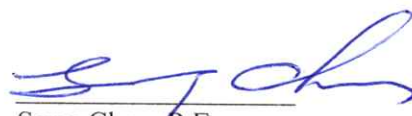
Structure of Soil Horizon Tested Single Grain
Consistence of Soil Horizon Tested: Moist Loose

Soil Permeability Class Rating (Based upon average textural analysis of this replicate and other replicate samples)

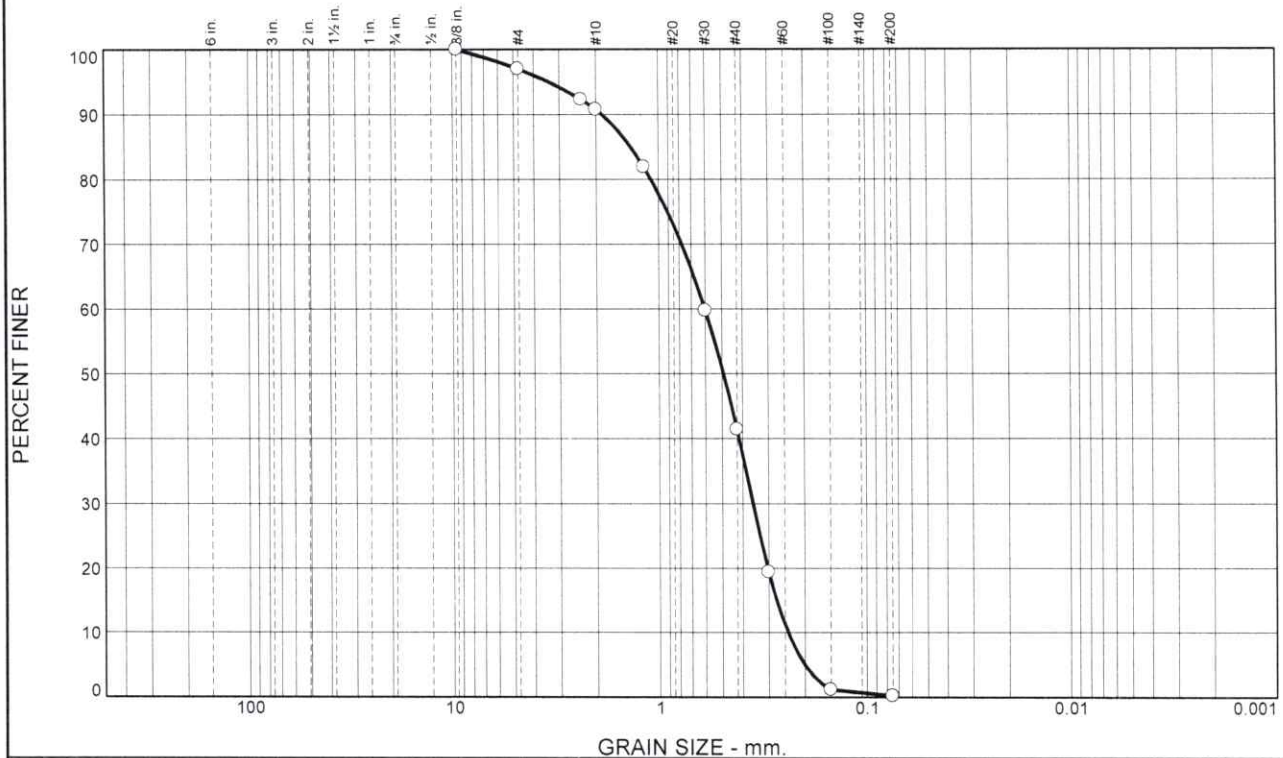
K5

REMARKS: This Beige SAND is classified as K5. The Permeability rate is >20 in./hr.

Soil Evaluator: Tony Tian


Song Chen, P.E.
NJ license No. 44792

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	3.0	6.3	49.3	41.2	0.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8	100.0 ✓	100.0	
#4	97.0 ✓	95.0 - 100.0	
#8	92.3 ✓	80.0 - 100.0	
#10	90.7		
#16	81.9 ✓	50.0 - 85.0	
#30	59.7 ✓	25.0 - 60.0	
#40	41.4 ✓		
#50	19.4 ✓	5.0 - 30.0	
#100	1.1 ✓	0.0 - 10.0	
#200	0.2 ✓	0.0 - 3.0	

* C-33

Soil Description

Beige Med. to Fine SAND, trace Gravel. Received Date: 8/4/17.
Source: Jackson.

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 1.8767 D₈₅= 1.3674 D₆₀= 0.6038
D₅₀= 0.4925 D₃₀= 0.3567 D₁₅= 0.2745
D₁₀= 0.2418 C_u= 2.50 C_c= 0.87

Classification

USCS= SP AASHTO=

Remarks

This sample meets the required specification.
F.M.=2.49

Sample Number: 2

Date: 8/10/17

Key-Tech 210 Maple Place * Keyport, NJ 07735 Phone: 732-888-8308 Fax: 732-888-8307		Client: Clayton Sand Project: Jackson - K-5 - C-33 Project No: N/A	Figure Lab #265
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Tested By: Tony Tian

