



April 17, 2018

Kimley Horn
600 N Pine Island Road, Suite 450
Plantation, FL 33324

Attention: Mr. Gary Ratay, P.E.

Re: Borehole Permeability Tests and Pavement Cores
Drainage Sub-Basin #61
Palmetto Bay, Miami, Florida
TSF File No. 7111-18-089

Dear Gary:

As requested, TIERRA SOUTH FLORIDA, Inc. (TSF) has completed two (2) Borehole Permeability (BHP) tests, 15 feet deep and two (2) Pavement Cores and at the above-referenced site.

The BHP tests performed were conducted in accordance with South Florida Water Management District (SFWMD) Standards. The tests were performed using the usual open-hole, constant head methodology. The hole was advanced to 15 feet deep. The boring was completed as open well with gravel pack (6-20 silica sand). The well screen slot widths were 0.020 inches. Water from the drill rig tank was then pumped into the open wells, and the amount of water required maintaining constant head was recorded. Results of our field permeability tests are attached.

The Pavement Cores were performed using a truck mounted drill rig with a 6 inches core barrel. At each location the base and subgrade material were measured. Results of our field exploration are summarized in a table format attached to this report, including pictures of the asphalt pavement core recovered and approximate test locations.

If you have any questions pertaining to this report, or if we may be of further service, please contact our office.

Very truly yours,

TIERRA SOUTH FLORIDA, INC.

Ramakumar Vedula, P.E.
Principal Engineer
FL. Registration No. 54873

Maximo Peralta Alvarez
Geotechnical Engineer

Attachment: Location Plan
Borehole Permeability (BHP) Test Results
Pavement Coring Data
Core Pictures



BORINGS LOCATION PLAN

 Approximate Location of BHP Test and Pavement Core

DRAWN BY:
NG

APPROVED BY:
RK

ENGINEER OF RECORD:
RAJ KRISHNASAMY, P.E.
FLORIDA LICENSE NO.:
53567



RAJ KRISHNASAMY, P.E.
P.E. LICENSE NUMBER 53567
TIERRA SOUTH FLORIDA
2765 VISTA PARKWAY, S-10
WEST PALM BEACH, FL 33411
CERTIFICATE OF AUTHORIZATION 28073

SCALE:
NTS

PROJECT NUMBER:
7111-18-089

GEOTECHNICAL ENGINEERING SERVICES
DRAINAGE SUB-BASIN #61
PALMETTO BAY
PALMETO BAY, FLORIDA

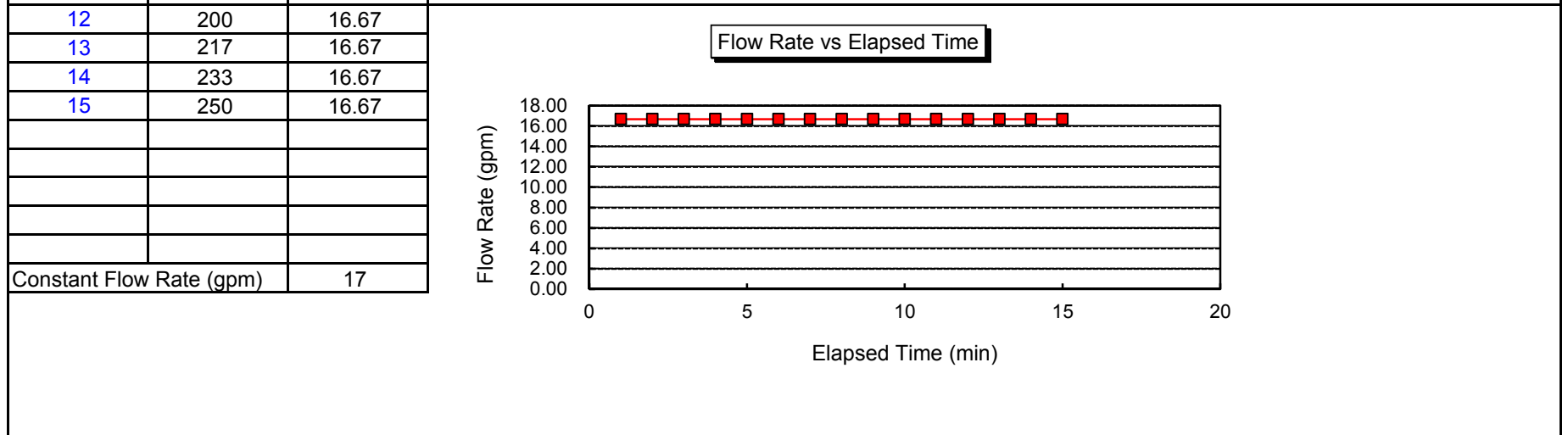
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**USUAL OPEN - HOLE TEST EVALUATION
SOUTH FLORIDA WATER MANAGEMENT METHOD**

Client:	<u>Kimley-Horn</u>	Test No.:	<u>BHP-1</u>	Date:	<u>03/30/18</u>
Project:	<u>Drainage Sub Basin #61_Palmetto Bay</u>	Well Depth:	<u>15.0</u> Feet	Analyst:	<u>PV</u>
Job No.:	<u>7111-18-089</u>	Location:	<u>Palmetto Bay, Florida</u>		

Elapsed Time (min)		Flow Rate (gpm)	Equation for K Value:	Soil profile:
0	0.00	0.00	$\frac{4Q}{\pi \cdot d(2H_2^2 + 4H_2D_s + H_2d)}$	0.0' -0.13' ASPHALT
1	17	16.67	k = 5.69E-04 CF/S/Ft ² - Ft Head H ₂ = 5.00 Ft Hydraulic Head	0.13' -0.4' LIGHT BROWN LIMEROCK (BASE)
2	33	16.67		0.4' -5.0' LIGHT BROWN SILTY SAND W/ LIMEROCK
3	50	16.67		5.0' -15.0' LIGHT BROWN SANDY LIMESTONE
4	67	16.67		
5	83	16.67		
6	100	16.67		
7	117	16.67		
8	133	16.67		
9	150	16.67		
10	167	16.67		
11	183	16.67		
12	200	16.67		
13	217	16.67		
14	233	16.67		
15	250	16.67		
			Where:	Depth of GWT (FT)= 5.00
				Hydraulic Conductivity
				K= 5.69E-04 CF/S/Ft² - Ft Head





**USUAL OPEN - HOLE TEST EVALUATION
SOUTH FLORIDA WATER MANAGEMENT METHOD**

Client:	<u>Kimley-Horn</u>	Test No.:	<u>BHP-2</u>	Date:	<u>03/30/18</u>
Project:	<u>Drainage Sub Basin #61_Palmetto Bay</u>	Well Depth:	<u>15.0</u> Feet	Analyst:	<u>PV</u>
Job No.:	<u>7111-18-089</u>	Location:	<u>Palmetto Bay, Florida</u>		

Elapsed Time (min)	Flow Rate (gpm)
0	0.00
1	16.67
2	16.67
3	16.67
4	16.67
5	16.67
6	16.67
7	16.67
8	16.67
9	16.67
10	16.67
11	16.67
12	16.67
13	16.67
14	16.67
15	16.67
Constant Flow Rate (gpm)	17

Equation for K Value: $\frac{4Q}{\pi \cdot d(2H_2^2 + 4H_2D_s + H_2d)}$

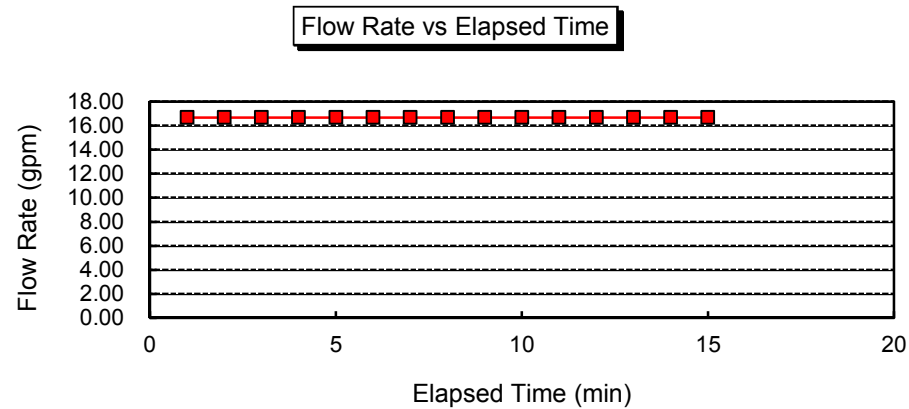
Soil profile:
 0.0' -0.23' ASPHALT
 0.23' -0.33' LIGHT BROWN LIMEROCK (BASE)
 0.33' -4.5' GRAY SILT (ML)
 4.5' -15.0' LIGHT BROWN SANDY LIMESTONE

k = 6.20E-04 CF/S/Ft² - Ft Head
 H₂ = 4.50 Ft Hydraulic Head

Depth of GWT (FT)= 4.50

Where: **Hydraulic Conductivity**

K= 6.20E-04 CF/S/Ft² - Ft Head



Pavement Core
PC-1



Empire

Model 4004
Empire Level, Mfg. Corp.
Mukwonago, WI 53149



47

46

45

44

43

42

41

40

39

1

2

3

4

5

6

7

8

9

10

16ths

31

46

61

76

91

106

121

31

46

61

76

91

106

121

Pavement Core
PC-2



Empire

Model 4004
Empire Level Mfg. Corp.
Mukwonago, WI 53149

