



Locations:

1101 S. Winchester Blvd.
Suite G - 173
San Jose, CA 95128
(408) 727-0330

4741 E. Hunter Ave.,
Suite A
Anaheim, CA 92807
(714) 282-8777

San Jose Office
June 6, 2011
Report 11-157-0103

L.H. Voss Materials, Inc.
2445 Del Vista Monte
Concord, CA 94520

Attn: Butch Voss

RE: Lennox Blend

Background

The sample received May 26, 2011 was identified as representing media for use in bioswale applications. The sample was analyzed for chemistry, fertility, and physical properties (S&PL report #11-146-0050). The results of the analyses are attached.

Analytical Results and Comments

The reaction of the soil is slightly alkaline at a pH of 7.2 and falls within the range preferred by most plants. Salinity (ECe) and sodium are slightly elevated. However, with several thorough irrigations and adequate drainage, salinity should not be an issue. Boron is safely low. The sodium adsorption ratio (SAR) shows sodium adequately balanced by soluble calcium and magnesium.

The texture of the soil is sand according to the USDA Soil Classification system. The material contains 9.6% gravel dry weight, which falls within the often specified range of 0-10% gravel content. Silt and clay content fall within the specified range. The percolation rate is 7.4 inches per hour, and falls within the 2-10 inch per hour range often specified for this bioswale material. Organic matter is adequate at 8.0% dry weight. In terms of soil fertility, nitrogen is low. Potassium, zinc, manganese, and sulfate are abundant, but not problematically so. The remaining nutrients are adequate for proper plant nutrition.

The soil could benefit from the addition of an organic nitrogen fertilizer such as blood meal applied at a rate of 12 lbs per 1000 sq. ft. incorporated to a depth of 6 inches after the soil is laid to its final grade.

Megan Hynes, Ph.D.

Emailed: lhvoss@lhvoss.com





Concord CA 94520

Project : Lennox Blend 4422

Report No : **11-146-0050**

Purchase Order :

Date Recd : 05/26/2011

Date Printed : 06/02/2011

Page : 1 of 1

COMPREHENSIVE SOIL ANALYSIS

Sample Description - Sample ID	Half Sat %	pH	ECe dS/m	NO ₃ -N ppm	NH ₄ -N ppm	PO ₄ -P ppm	K ppm	Ca ppm	Mg ppm	Cu ppm	Zn ppm	Mn ppm	Fe ppm	Organic % dry wt.	Lab No.
	TEC	Qual Lime		Sufficiency Factors											
Lennox Blend 4422	47	7.2	4.1	5	7	40	613	899	301	2.3	23.0	24	44	8.0	28642
	64	None		0.1	0.7	3.1	0.8	1.8	2.8	7.1	3.4	1.4			

Saturation Extract Values						SAR	Gravel %		Percent of Sample Passing 2 mm Screen					USDA Soil Classification	Lab No.
Ca meq/L	Mg meq/L	Na meq/L	K meq/L	B ppm	SO ₄ meq/L		Coarse 5 - 12	Fine 2 - 5	Sand			Silt .002-.05	Clay 0-.002		
								Very Coarse 1 - 2	Coarse 0.5 - 1	Med. to Very Fine 0.05 - 0.5					
5.0	6.9	11.2	15.7	0.78	14.3	4.6	5.4	4.2	14.5	45.7	28.7	3.8	7.2	Sand	28642

Sufficiency factor (1.0=sufficient for average crop) below each nutrient value. N factor based on 200 ppm constant feed. SAR = Sodium adsorption ratio. Half Saturation %=approx field moisture capacity. Nitrogen(N), Potassium(K), Calcium(Ca) and Magnesium(Mg) by sodium chloride extraction. Phosphorus(P) by sodium bicarbonate extraction. Copper(Cu), Zinc(Zn), Manganese(Mn) & Iron(Fe) by DTPA extraction. Sat. ext. method for salinity (ECe as dS/m), Boron (B), Sulfate(SO₄), Sodium(Na). Gravel fraction expressed as percent by weight of oven-dried sample passing a 12mm(1/2 inch) sieve. Particle sizes in millimeters. Organic percentage determined by Walkley-Black or Loss on Ignition.

* LOW , SUFFICIENT , HIGH

PERCOLATION RATE					
Client Name	L.H. Voss				
Report Number	11-146-0051				
Lab Number	66080				
Cylinder Area in cm ²	21.4				
Height of Soil Column in cm	8.9				
Hydraulic Head in cm	14.1				
Time Collected in min	48				
Volume Collected in ml	510.42				
K sat in/hr @ temp	7.409025683				