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SAN JOSE OFFICE
May 6, 2010
Report 10-112-0057

L.H. VOSS MATERIALS
2445 Del Vista Monte
Concord, CA 94520

Attn: Rob Hawkins

RE: LENOX FILTER MIX

BACKGROUND

The sample received 4/22 is intended for use in Bioswale applications where rapid percolation of water is desired.

ANALYTICAL RESULTS

After passing water through a column of this media for 24 hours the percolation rate was measured in the laboratory at 30.9 inches per hour.

Particle size data show 16% of the material falling in the gravel category. The sand component is almost entirely in the coarse and very coarse categories with very little medium to fine sand present. The smaller than 2-mm fraction falls in the loamy sand classification by USDA standards and silt plus clay based on just this fraction is 13.2%. If this is adjusted to also include the gravel component the sum of silt plus clay is 11.1%. Organic matter content at 2.2% is modest.

Reaction is moderately alkaline and even with no lime present this is a bit higher than most plants prefer. Salinity, boron and sodium are safely low and the SAR value shows soluble sodium properly balanced by calcium and magnesium.

Available nitrogen is low with calcium and magnesium sufficient. Phosphorus, potassium and sulfate are each well above sufficiency but nothing is excessive.

DISCUSSION

The amount of organic matter is good from the standpoint of being able to filter organic contaminants and minimize settling of the soil profile. Since the sand is relatively coarse the addition of some compost only to the top 6-inches might be considered after the media is in place. This would improve moisture holding capacity in the immediate root zone and should decrease the frequency of irrigation required to get the plants established. A rate of 4 cubic yards per 1000 square feet would be appropriate for blending to 6-inches depth. If the plants intended are not particularly tolerant of moderate alkalinity, then soil sulfur should also be incorporated to this depth after being applied at a rate of 15 pounds per 1000 square feet.





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After planting, no nutrient supplementation would be required aside from modest nitrogen that should ideally be supplied from an organic source or a controlled release synthetic material.

JIM WEST
Email 4 pages.



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SOIL ANALYSIS

Send To : L.H. Voss Materials, Inc. 2445 Del Vista Monte Concord CA 94520	Project : Lenox Filter Mix	Report No : 10-112-0057 Cust No : 00420 Date Printed : 05/06/2010 Date Received : 04/22/2010 Page : 1 of 1 Lab Number : 24260
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Sample Id : **Lenox Filter Mix**

SATURATION EXTRACT - PLANT SUITABILITY

Test	Result	Effect on Plant Growth				
		Negligible	Sensitive Crops Restricted	Many Crops Restricted	Only Tolerant Crops Satisfactory	Few Crops Survive
Salinity (ECe)	2.3 dS/m					
Sodium Adsorption Ratio (SAR) *	1.35					
Boron (B)	0.31 ppm					
Sodium (Na)	4.0 meq/L					
Chloride (Cl)						
Carbonate (CO3)						
Bicarbonate (HCO3)						
Fluoride (F)						

* Structure and water infiltration of mineral soils potentially adversely affected at SAR values higher than 6.

Test	Result	Strongly Acidic	Moderately Acidic	Slightly Acidic	Neutral	Slightly Alkaline	Moderately Alkaline	Strongly Alkaline	Qualitative Lime
pH	8.0 s.u.								None

EXTRACTABLE NUTRIENTS

Test	Result	Sufficiency Factor	SOIL TEST RATINGS					NO3-N
			Very Low	Low	Medium	Optimum	Very High	
Available-N	14 ppm	0.4						9 ppm
Phosphorus (P) - Olsen	42 ppm	2.0						NH4-N
Potassium (K)	324 ppm	2.9						5 ppm
Potassium - sat. ext.	7.0 meq/L							Total Exchangeable Cations(TEC)
Calcium (Ca)	957 ppm	0.8						72 meq/kg
Calcium - sat. ext.	7.7 meq/L							
Magnesium (Mg)	278 ppm	1.7						
Magnesium - sat. ext.	10.0 meq/L							
Copper (Cu)								
Zinc (Zn)								
Manganese (Mn)								
Iron (Fe)								
Boron (B) - sat. ext.	0.31 ppm	1.0						
Sulfate - sat. ext.	10.8 meq/L	3.6						
Exch Aluminum								

Cu, Zn, Mn and Fe were analyzed by DTPA extract.

PARTICLE SIZE ANALYSIS

Half Sat	Organic Matter	Weight Percent of Sample Passing 2mm Screen							USDA Soil Classification
		Gravel		Sand			Silt	Clay	
		Coarse 5-12	Fine 2-5	Very Coarse 1-2	Coarse 0.5-1	Med. to Very Fine 0.05-0.5	.002-.05	0-.002	
17 %	2.2 %	7.9 %	8.7 %	43.4 %	35.6 %	7.7 %	5.9 %	7.3 %	Loamy Sand
		Gravelly							

Graphical interpretation is a general guide. Optimum levels will vary by crop and objectives.

PERCOLATION RATE					
Client Name	L.H. Voss				
Report Number	10-112-0056				
Lab Number	65071				
Lenox Filter Mix					
Cylinder Area in cm ²	21.4				
Height of Soil Column in cm	8.9				
Hydraulic Head in cm	12.1				
Time Collected in min	11				
Volume Collected in ml	418.78				
K sat in/hr @ temp	30.91018783				