



Anaheim Office
May 3, 2021
Report 21-113-0001

Zanker Landscape Materials
675 Los Esteros Road
San Jose, CA 95134

Attn: Marin

RE: ZZ Top Soil processed on 4/23/2021

The first sheet is the actual test data and the second sheet is a calculated table showing the percent of each required nutrient that is now readily available compared to the total present. Further decomposition of the organic fraction will release many of these nutrients as available for plant utilization. The third sheet evaluates the potential rate limiting factors in the top table and in this case, there are no chemical characteristics that would limit the rate to less than normally employed for amendments or for direct planting. The bottom table on that sheet uses an example rate of 33% that is based on the amount of organic matter generally required to amend soils of low organic content. At the example rate, the degree to which the compost would satisfy the immediate requirement for each required nutrient is indicated.

Approximately 6% of the material is retained on a 1/2 inch screen. Of the material passing the 1/2 inch screen 91% of the amendment passes the 6.4 mm (1/4 inch) screen and 65% passes the 2.36 mm (about 1/8 inch). The amount of very fine material present indicates this material will have the potential for issues with dustiness at the low as-received moisture level. Actual organic matter content is favorable at 296 pounds per cubic yard. Organic matter comprises 41% of product by dry weight.

The carbon to nitrogen ratio at 71.7 is not sufficient to meet the anticipated decomposition requirement and there will be a consumption of nitrogen as the microbes break down the less resistant organic matter. There is a moderate level of available nitrogen, most of which is in the ammonium form. To ensure that the compost does not compete with the plants for nitrogen consider incorporating Ureaform 38-0-0 (27% water insoluble nitrogen) at a rate of 1 pound per cubic yard of amendment. This slow release product should offset the requirement of the amendment but the planting should still be on a regular nitrogen fertilization program.

At the example rate of 33% volume this amendment would provide a favorable amount of organic matter to benefit soil structure and satisfy the organic matter need for most soil types. At this rate the amendment would also provide a significant nutrient contribution of immediately available nitrogen and sulfate magnesium and sulfate and a moderate amount of manganese. These contributions at the example rate are noted on the last page. This volume rate is equivalent to 6 cubic yards per 1000 square feet for blending to 6 inches depth. This would be adding 1776 pounds organic matter, which would increase organic content of a sandy loam soil by about 6.5% on a dry weight basis.

Reaction is slightly acidic at a pH of 6.7. Salinity and soluble levels of sodium, chloride and boron are safely low for use at the recommended rate. Salinity is also safely low if the material is used as a direct planting media.

The table that follows the data page shows what nutrients are present in total amounts as well as what portion is immediately available. For convenience these results are expressed both on a cubic yard basis and as weight of nutrient and organic matter per as-received ton of ZZ Top Soil. Further release from the organic complex will continue to help satisfy plant needs for many of the nutrients.



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If we can be of any further assistance, please feel free to contact us.

A handwritten signature in black ink that reads "William Darlington". The signature is written in a cursive style.

William Darlington, M.S., CCA

wdarlington@wpacorp.com

COMPOST / AMENDMENT EVALUATION

Send To : Zanker Landscape Materials 675 Los Esteros Road San Jose CA 95134	Project : Z-Z Topsoil	Report Number : 21-113-0001 Customer Number : 01002 Date printed : 04/28/2021 Date received : 04/23/2021 Page : 1 of 3 Lab Number : 90546
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Sample Id : **Z-Z Topsoil**

Nutrient	Total - Dry Weight	Extractable - Dry Weight	Saturation Extract	Sufficiency Factor
Nitrogen (N)	0.34 %	434 ppm		2.6
NH ₄ -N		393 ppm		
NO ₃ -N		41 ppm		
Phosphorus (P)	0.08 %	109 ppm		1.1
Phosphorus (P ₂ O ₅)	0.18 %	250 ppm		
Potassium (K)	0.16 %	491 ppm	3.9 meq/L	1.3
Potassium (K ₂ O)	0.19 %	594 ppm		
Calcium (Ca)	1.31 %	2090 ppm	15.8 meq/L	0.9
Magnesium (Mg)	0.71 %	462 ppm	8.7 meq/L	1.3
Sodium (Na)	0.05 %		4.4 meq/L	
Sulfur (S)	0.12 %			
Sulfate (SO ₄)			33.2 meq/L	11.1
Chloride (Cl)			2.4 meq/L	
Copper (Cu)	24.4 ppm	0.9 ppm		0.5
Zinc (Zn)	51.2 ppm	5 ppm		0.8
Manganese (Mn)	297 ppm	29 ppm		1.9
Iron (Fe)	13200 ppm	78 ppm		1.2
Dilute Acid Fe		0.19 %		
Boron (B)	23.8 ppm		0.60 ppm	2.0

Test	Result
pH (sat paste)	6.7 s.u.
% Half Sat.	83
TEC	137 meq/kg
Qualitative Lime	None
Salinity (EC of sat ext.)	2.2 dS/m
SAR (Sodium adsorption ratio)	1.26
Sodium as % of ECe	18 %
Bulk Density - Dry	727 lbs/yd ³
Bulk Density - As Received	910 lbs/yd ³
Moisture - As Received	20.1 %
Organic	40.7 %
Weight of organic / yd ³	296 lbs/yd ³
Weight of mineral / yd ³	431 lbs/yd ³
C/N Ratio	71.7

Gradation	
Wt Percent Retained 1"	5.4 %
Wt Percent Retained 1/2"	0.8 %
Fraction Passing 1/2 inch Screen - Dry Weight Basis	
Screen Opening	% Passing
Passing 9.5mm	99.4 %
Passing 6.4mm (1/4")	91.0 %
Passing 4.75mm	81.6 %
Passing 2.36mm	65.3 %
Passing 1.00mm	47.3 %
Passing 0.50mm	24.5 %

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NUTRIENT SUMMARY

Test	Amount Per Cubic Yard		Amount Per Ton, As Rec'd		Available as a % Of Total
	Total	Available	Total	Available	
Nitrogen	2.47 lbs	0.32 lbs	5.43 lbs	0.69 lbs	13
Phosphorus (P)	0.55 lbs	0.08 lbs	1.21 lbs	0.17 lbs	14
Phosphorus (P ₂ O ₅)	1.26 lbs	0.18 lbs	2.78 lbs	0.4 lbs	14
Potassium (K)	1.18 lbs	0.36 lbs	2.6 lbs	0.78 lbs	30
Potassium (K ₂ O)	1.43 lbs	0.43 lbs	3.15 lbs	0.95 lbs	30
Calcium	9.5 lbs	1.52 lbs	20.88 lbs	3.34 lbs	16
Magnesium	5.2 lbs	0.34 lbs	11.42 lbs	0.74 lbs	6
Sulfur	0.88 lbs	0.64 lbs	1.93 lbs	1.41 lbs	73
Copper	0.28 ozs	0.01 ozs	0.62 ozs	0.02 ozs	3
Zinc	0.6 ozs	0.06 ozs	1.31 ozs	0.14 ozs	11
Manganese	3.45 ozs	0.34 ozs	7.59 ozs	0.74 ozs	10
Iron	153.54 ozs	0.91 ozs	337.5 ozs	1.99 ozs	1
Boron	0.28 ozs	0.01 ozs	0.61 ozs	0.03 ozs	5
Organic Matter	296 lbs		650 lbs		

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POTENTIAL RATE LIMIT FACTORS

Test	% Volume rate limit	Cubic yard amendment per 1000 sf to 6"							
		1	2	3	4	5	6	7	8
		Volume % amendment blend with sandy loam							
		5	11	16	22	27	32	38	43
EC sat. ext.	No Limit								
Sodium sol.	No Limit								
Chloride sol.	No Limit								
Boron sol.	No Limit								
NH ₄ -N	No Limit								
Available Nitrogen	No Limit								
PO ₄ P	No Limit								
Copper	No Limit								
Zinc	No Limit								

Rate limit estimates based on amending a non-problematic sandy loam

RELATIVE IMMEDIATE NUTRIENT AND ORGANIC VALUE

* Example Rate 33 %	Slight	Moderate	Abundant
Nitrogen	[Green bar]		
Phosphorus	[Yellow bar]		
Potassium	[Yellow bar]		
Calcium	[Yellow bar]		
Magnesium	[Yellow bar]		
Copper	[Yellow bar]		
Zinc	[Yellow bar]		
Manganese	[Green bar]		
Iron	[Yellow bar]		
Sulfate	[Green bar]		
Organic Matter	[Green bar]		

* If no chemical characteristics are rate limiting, the example rate is based on organic content of the amendment (up to a max of 43%).

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