



Colorado State University

CSU SPUR

Soil, Water and Plant Testing Laboratory
 4780 National Western Drive
 Denver, CO 80216

Tel: (970) 491-5061
 Email: soiltestinglab@colostate.edu

Larry Hiersman
 414 Estz Es Place
 Taos, NM 87571

Lab ID: 2023S58
 Sample ID: #1

Date Received: 2/27/2023
 Date Reported: 3/27/2023

Soil Analysis	Units	Results	Test Rating*						
			Strongly Acid	Moderately Acid	Slightly Acid	Neutral	Slightly Alkaline	Moderately Alkaline	Strongly Alkaline
1:1 Soil pH		7.5	<5.4	5.4-5.7	5.8-6.4	6.5-7.2	7.3-7.6	7.7-7.9	>7.9
1:1 Soluble Salts (EC)	mmho/cm	0.14	<0.2	0.2-0.7	0.8-1.2	1.3-2.5	2.6-5.0	>5.0	
Excess Lime		NONE							
Organic Matter LOI	%	4.4	<0.5	0.5-1.5	1.6-3.0	3.1-5.0	>5.0		
KCl Nitrate-N	ppm	0-4" 1.3	Very Low <5	Low 5-10	Medium 11-25	High 26-50	Very High >50	lb/1000 sq. ft. 0.0	Recommendation lb/1000 sq. ft. 1.2
Olsen Bicarbonate Phosphorus (P)	ppm	0-4" 24	Very Low 0-3	Low 4-6	Medium 7-10	Optimum 11-15	High 16-20	Very High >20	Recommendation lb/1000 sq. ft. 0
Ammonium Acetate									
Potassium (K)	ppm	0-4" 247	Very Low <60	Low 60-120	Medium 121-160	Optimum 161-220	High 221-280	Very High >280	Recommendation lb/1000 sq. ft. 0
Calcium (Ca)	ppm	2900	Very Low <100	Low 100-200	Medium 201-300	Optimum 301-2500	High >2500	Very High >5000	Recommendation lb/1000 sq. ft. 0
Magnesium (Mg)	ppm	290	Very Low <25	Low 25-50	Medium 51-75	Optimum 76-100	High 101-200	Very High >200	Recommendation lb/1000 sq. ft. 0
Sodium (Na)	ppm	10							
Cation Exchange Capacity (CEC) or Sum of Cations	meq/100g	17.6	Sand 3-5	Loam 10-15	Silt Loams 15-25	Clay & Clay Loam 20-50	Organic Soils 50-100		
Base Saturation	%	100.0	H 4.0	K 82.0	Ca 14.0	Mg 0.0	Na		



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Soil Analysis	Units	Results	Test Rating*						Recommendation
Mehlich-3									
Sulfate-S	ppm	0-4"	Very Low	Low	Medium	Optimum	High	Very High	lb/1000 sq.ft. 1
		7.8	<2	2-5	6-10	11-15	>15		
DTPA									
Zinc (Zn)	ppm	0-4"	Very Low	Low	Medium	Optimum	High	Very High	lb/1000 sq.ft. 0
		0.98	<0.3	0.3-0.5	0.6-0.8	0.9-1.2	1.3-2.0	>2.0	
Iron (Fe)	ppm		Very Low	Low	Medium	Optimum	High	Very High	lb/1000 sq.ft. 0
		13.9	<1.0	1.0-2.5	2.6-5.0	5.1-15.0	15.1-30	>30	
Manganese (Mn)	ppm		Very Low	Low	Medium	Optimum	High	Very High	lb/1000 sq.ft. 0
		8	<0.5	0.5-1.0	1.1-3.0	3.1-6.0	6.1-10.0	>10	
Copper (Cu)	ppm		Very Low	Low	Medium	Optimum	High	Very High	lb/1000 sq.ft. 0
		0.53	<0.1	0.1-0.2	0.3-0.4	0.5-0.8	0.9-1.5	>1.5	
Hot Water Extraction									
Boron (B)	ppm	0-4"	Very Low	Low	Medium	Optimum	High	Very High	lb/1000 sq.ft. 0.005
		0.69	<0.2	0.2-0.5	0.6-0.8	0.9-1.5	1.6-2.5	>2.5	
Calcium Nitrate									
Chloride (Cl)	ppm								
Soil Texture									
% Sand	%	47							
% Silt	%	30							
% Clay	%	23							
Texture by Hydrometer		Loam							
Heavy Metals									
Arsenic (As)	ppm								
Cadmium (Cd)	ppm								
Chromium (Cr)	ppm								
Lead (Pb)	ppm								
Molybdenum (Mo)	ppm								
Selenium (Se)	ppm								
Sodium Absorption Ratio									
SAR									

*Test ratings are provided for general crop production. The ranges may be different for individual crops or for specific situations.

Comments:

This soil is adequate for native vegetation. Apply 0.4 lb N/1000 sq. ft. three time during the growing season. Apply 1 lb S per 1000 sq. ft. at planting or beginning of growing season, There have been no confirmed deficiencies of zinc, manganese, copper, and boron in lawns in NM. Native vegetation growth may not improve if these nutrients are applied. This soil has a low wet aggregate stability due to the high content of sand.



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Lab ID: 2023S59
 Sample ID: #2

Date Received: 2/27/2023
 Date Reported: 3/27/2023

Soil Analysis	Units	Results	Test Rating*					Recommendation	
			Strongly Acid	Moderately Acid	Slightly Acid	Neutral	Slightly Alkaline		Moderately Alkaline
1:1 Soil pH		8.2	<5.4	5.4-5.7	5.8-6.4	6.5-7.2	7.3-7.6	7.7-7.9	>7.9
1:1 Soluble Salts (EC)	mmho/cm	0.25	Very Low	Low	Moderate	Moderately High	High	Very High	
Excess Lime		HIGH							
Organic Matter LOI	%	3.7	Very Low	Low	Medium	High	Very High		
KCl Nitrate-N	ppm	0-4" 1.4	Very Low	Low	Medium	High	Very High	lb/1000 sq. ft.	Recommendation lb/1000 sq. ft. 1.2
Olsen Bicarbonate Phosphorus (P)	ppm	0-4" 22	Very Low	Low	Medium	Optimum	High	Very High	Recommendation lb/1000 sq. ft. 0
Ammonium Acetate									
Potassium (K)	ppm	0-4" 204	Very Low	Low	Medium	Optimum	High	Very High	Recommendation lb/1000 sq. ft. 0
Calcium (Ca)	ppm	5682	Very Low	Low	Medium	Optimum	High	Very High	Recommendation lb/1000 sq. ft. 0
Magnesium (Mg)	ppm	136	Very Low	Low	Medium	Optimum	High	Very High	Recommendation lb/1000 sq. ft. 0
Sodium (Na)	ppm	6							
Cation Exchange Capacity (CEC) or Sum of Cations	meq/100g	30.1	Sand	Loam	Silt Loams	Clay & Clay Loam	Organic Soils		
Base Saturation	%	100.0	H	K	Ca	Mg	Na		



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Lab ID: 2023S59
 Sample ID: #2

Date Receive: 2/27/2023
 Date Reporte: 3/27/2023

Soil Analysis	Units	Results	Test Rating*						Recommendation
Mehlich-3									
Sulfate-S	ppm	0-4" 24.5	Very Low <2	Low 2-5	Medium 6-10	Optimum	High 11-15	Very High >15	lb/1000 sq.ft. 0
DTPA									
Zinc (Zn)	ppm	1.13	Very Low <0.3	Low 0.3-0.5	Medium 0.6-0.8	Optimum 0.9-1.2	High 1.3-2.0	Very High >2.0	lb/1000 sq.ft. 0
Iron (Fe)	ppm	13.8	Very Low <1.0	Low 1.0-2.5	Medium 2.6-5.0	Optimum 5.1-15.0	High 15.1-30	Very High >30	lb/1000 sq.ft. 0
Manganese (Mn)	ppm	31.1	Very Low <0.5	Low 0.5-1.0	Medium 1.1-3.0	Optimum 3.1-6.0	High 6.1-10.0	Very High >10	lb/1000 sq.ft. 0
Copper (Cu)	ppm	1.27	Very Low <0.1	Low 0.1-0.2	Medium 0.3-0.4	Optimum 0.5-0.8	High 0.9-1.5	Very High >1.5	lb/1000 sq.ft. 0
Hot Water Extraction									
Boron (B)	ppm	0-4" 0.48	Very Low <0.2	Low 0.2-0.5	Medium 0.6-0.8	Optimum 0.9-1.5	High 1.6-2.5	Very High >2.5	lb/1000 sq.ft. 0.01
Calcium Nitrate									
Chloride (Cl)	ppm								
Soil Texture									
% Sand	%	47							
% Silt	%	28							
% Clay	%	25							
Texture by Hydrometer		Loam							
Heavy Metals									
Arsenic (As)	ppm								
Cadmium (Cd)	ppm								
Chromium (Cr)	ppm								
Lead (Pb)	ppm								
Molybdenum (Mo)	ppm								
Selenium (Se)	ppm								
Sodium Absorption Ratio									
SAR									

*Test ratings are provided for general crop production. The ranges may be different for individual crops or for specific situations.

Comments:

This soil is adequate for native vegetation. Apply 0.4 lb N/1000 sq. ft. three time during the growing season. Apply 1 lb S per 1000 sq. ft. per 1000 sq. ft at planting or beginning of growing season, There have been no confirmed deficiencies of zinc, manganese, copper, and boron in lawns in NM. Native vegetation growth may not improve if these nutrients are applied. This soil has a low wet aggregate stability due to the high content of sand.



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Larry Hersman
 414 Estz Es Place
 Taos, NM 87571

Lab ID: 2023560
 Sample ID: #3

Date Received: 2/27/2023
 Date Reported: 3/27/2023

Soil Analysis	Units	Results	Test Rating*						Recommendation	
			Strongly Acid	Moderately Acid	Slightly Acid	Neutral	Slightly Alkaline	Moderately Alkaline		Strongly Alkaline
1:1 Soil pH		8.3	<5.4	5.4-5.7	5.8-6.4	6.5-7.2	7.3-7.6	7.7-7.9	>7.9	
1:1 Soluble Salts (EC)	mmho/cm	0.17	Very Low <0.2	Low 0.2-0.7	Moderate 0.8-1.2	Moderately High 1.3-2.5	High 2.6-5.0	Very High >5.0		
Excess Lime		HIGH								
Organic Matter LOI	%	3.7	Very Low <0.5	Low 0.5-1.5	Medium 1.6-3.0	High 3.1-5.0	Very High >5.0			
KCl Nitrate-N	ppm	0-4"	Very Low	Low	Medium	High	Very High	lb/1000 sq. ft.	Recommendation	
		<0.1	<5	5-10	11-25	26-50	>50	0.0	1.2	
Olsen Bicarbonate Phosphorus (P)	ppm	0-4"	Very Low	Low	Medium	Optimum	High	Very High	Recommendation	
		30	0-3	4-6	7-10	11-15	16-20	>20	0	
Ammonium Acetate										
Potassium (K)	ppm	0-4"	Very Low	Low	Medium	Optimum	High	Very High	Recommendation	
		150	<60	60-120	121-160	161-220	221-280	>280	0	
Calcium (Ca)	ppm		Very Low	Low	Medium	Optimum	High	Very High	Recommendation	
		4918	<100	100-200	201-300	301-2500	>2500	>5000	0	
Magnesium (Mg)	ppm		Very Low	Low	Medium	Optimum	High	Very High	Recommendation	
		120	<25	25-50	51-75	76-100	101-200	>200	0	
Sodium (Na)	ppm	7								
Cation Exchange Capacity (CEC) or Sum of Cations	meq/100g	26	Sand 3-5	Loam 10-15	Silt Loams 15-25	Clay & Clay Loam 20-50	Organic Soils 50-100			
Base Saturation	%	100.0	H	K 1.0	Ca 95.0	Mg 4.0	Na 0.0			



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Lab ID: 2023S60
 Sample ID: #3

Date Received: 2/27/2023
 Date Reported: 3/27/2023

Soil Analysis	Units	Results	Test Rating*						Recommendation
Mehlich-3									
Sulfate-S	ppm	0-4" 19.5	Very Low <2	Low 2-5	Medium 6-10	Optimum	High 11-15	Very High >15	lb/1000 sq.ft. 0
DTPA									
Zinc (Zn)	ppm	0-4" 0.89	Very Low <0.3	Low 0.3-0.5	Medium 0.6-0.8	Optimum 0.9-1.2	High 1.3-2.0	Very High >2.0	lb/1000 sq.ft. 0
Iron (Fe)	ppm	16.1	Very Low <1.0	Low 1.0-2.5	Medium 2.6-5.0	Optimum 5.1-15.0	High 15.1-30	Very High >30	lb/1000 sq.ft. 0
Manganese (Mn)	ppm	45.6	Very Low <0.5	Low 0.5-1.0	Medium 1.1-3.0	Optimum 3.1-6.0	High 6.1-10.0	Very High >10	lb/1000 sq.ft. 0
Copper (Cu)	ppm	1.15	Very Low <0.1	Low 0.1-0.2	Medium 0.3-0.4	Optimum 0.5-0.8	High 0.9-1.5	Very High >1.5	lb/1000 sq.ft. 0
Hot Water Extraction									
Boron (B)	ppm	0-4" 0.59	Very Low <0.2	Low 0.2-0.5	Medium 0.6-0.8	Optimum 0.9-1.5	High 1.6-2.5	Very High >2.5	lb/1000 sq.ft. 0
Calcium Nitrate									
Chloride (Cl)	ppm								
Soil Texture									
% Sand	%	51							
% Silt	%	28							
% Clay	%	21							
Texture by Hydrometer		Loam							
Heavy Metals									
Arsenic (As)	ppm								
Cadmium (Cd)	ppm								
Chromium (Cr)	ppm								
Lead (Pb)	ppm								
Molybdenum (Mo)	ppm								
Selenium (Se)	ppm								
Sodium Absorption Ratio									
SAR									

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