

FALL 2016

Data Collection Report

Soil & Water Consulting

SILVERLAKES



SOIL and WATER CONSULTING

Course Name: Athletic Fields and Landscape

Date & Time of Visit: September 14, 2016

<u>9/14/16</u>	
Humidity/Air Temperature	75%/80°
Field Temperature	n/t

WATER	Acceptable Range For Water Sample	Hose 9/14/16
pH	6.50	8.10
EC	<2.25 mmhos/cm	1.00
Sodium		93.14
Calcium	20 - 60 ppm	93.49
Magnesium	10 - 25 ppm	16.72
Potassium	5 - 20 ppm	6.04
Phosphorus	0.1 - 0.4 ppm	0.28
Nitrate	5 - 50 ppm	0.20
Sulfur	30 - 90 ppm	97.53
Bicarbonate	<120 ppm	295.89
Boron	<0.67 ppm	0.23
Chloride	<177 ppm	119.82



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<i>FIELDS</i>	Acceptable Range For <u>Alkaline Soils Sample</u>	Original Construction Mix <u>9/14/16</u>
Organic Matter (Humus)	2 - 3%	0.24
Sulfur	12 - 16 ppm	40.00
Olsen - Phosphorus	13 - 20 ppm	<1
Calcium - TEC of 6 - 12	1,000 lbs/acre	3,334.00
Magnesium	>7% base saturation or at least 200 lbs/acre	9.05%/218
Potassium - TEC of 0 - 35	150 ppm	37.00
Copper	>0.8 ppm	<0.2
Manganese	4 ppm or more	2.00
Zinc	>1 - 2 ppm	<0.4

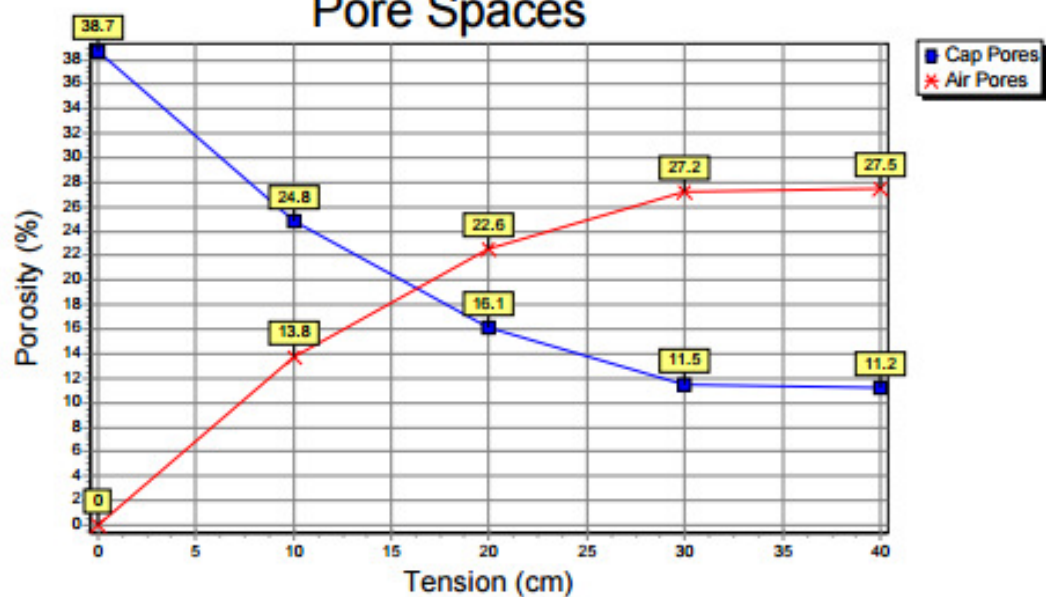
<i>FIELDS</i>	Acceptable Range For <u>Saturated Paste Sample</u>	Original Construction Mix <u>9/14/16</u>
nitrate - Bandera Bermuda	5-10 ppm	8.80
Phosphorus	2 - 7 ppm	0.07
Potassium	25-40 ppm	32.50
Calcium	50- 75 ppm	105.43
Magnesium	15-30 ppm	18.39
Sodium	0 - 30 ppm	113.60
Soluble Salts	<1,000 ppm	733.00
Bicarbonate	<60 ppm	70.77
Chloride	<200 ppm	195.00
SAR	<4%	2.68



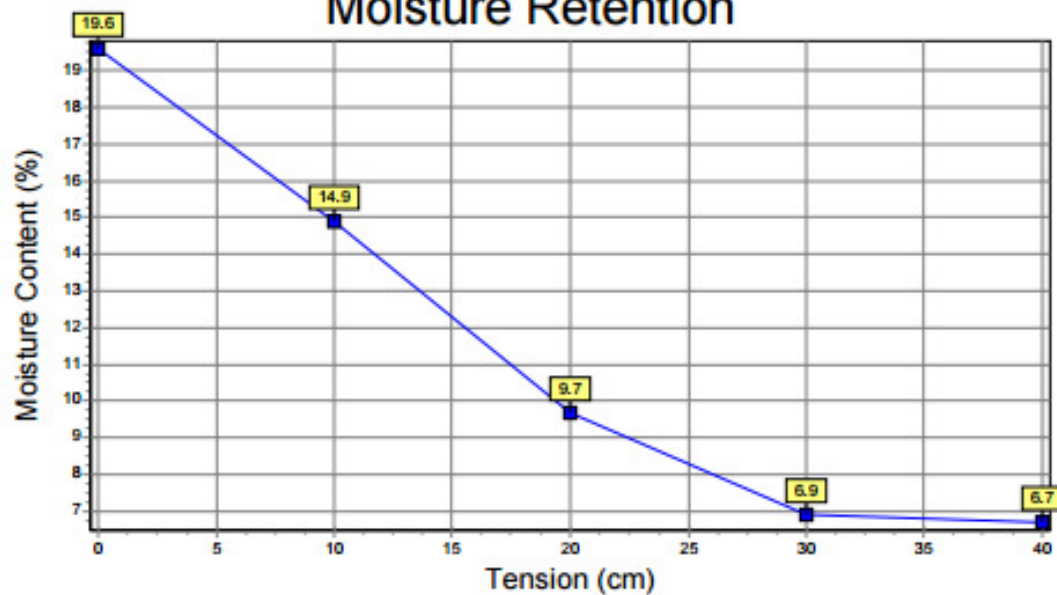
File Number: 76665
Client Name: Silver Lakes Sports Complex
Submitted By: Soil and Water Consulting
Start Date: 09/16/2016
Completed: 09/22/2016

Lab Number: 1699
Sample Description: ORIGINAL
FIELD
MIX

Pore Spaces



Moisture Retention



* NON A2LA ACCREDITED

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BACKYARD	Acceptable Range For <u>Alkaline Soils Sample</u>	Native Soil <u>9/14/16</u>
Organic Matter (Humus)	2 - 3%	1.02
Sulfur	12 - 16 ppm	263.00
Olsen - Phosphorus	13 - 20 ppm	14.00
Calcium - TEC of 6 - 12	1,000 lbs/acre	5,302.00
Magnesium	>7% base saturation or at least 200 lbs/acre	8.52%/328
Potassium - TEC of 0 - 35	150 ppm	99.00
Copper	>0.8 ppm	1.04
Manganese	4 ppm or more	4.00
Zinc	>1 - 2 ppm	0.63

BACKYARD	Acceptable Range For <u>Saturated Paste Sample</u>	Native Soil <u>9/14/16</u>
Nitrate - Bermudagrass	10-15 ppm	142.30
Phosphorus	2 - 7 ppm	0.03
Potassium	25-40 ppm	20.64
Calcium	50- 75 ppm	568.37
Magnesium	15-30 ppm	72.10
Sodium	0 - 30 ppm	145.33
Soluble Salts	<1,000 ppm	2,432.00
Bicarbonate	<60 ppm	48.81
Chloride	<200 ppm	321.00
SAR	<4%	1.53



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LANDSCAPE	Acceptable Range For <u>Alkaline Soils Sample</u>	Front Entrance left side <u>9/14/16</u>
Organic Matter (Humus)	2 - 3%	1.54
Sulfur	12 - 16 ppm	58.00
Olsen - Phosphorus	13 - 20 ppm	55.00
Calcium - TEC of 6 - 12	1,000 lbs/acre	5,754.00
Magnesium	>7% base saturation or at least 200 lbs/acre	16.9%/786
Potassium - TEC of 0 - 35	150 ppm	55.00
Copper	>0.8 ppm	1.41
Manganese	4 ppm or more	4.00
Zinc	>1 - 2 ppm	1.09

LANDSCAPE	Acceptable Range For <u>Saturated Paste Sample</u>	Front Entrance left side <u>9/14/16</u>
Nitrate - Miscellaneous	3-5 ppm	4.00
Phosphorus	2 - 7 ppm	1.20
Potassium	25-40 ppm	9.02
Calcium	50- 75 ppm	111.51
Magnesium	15-30 ppm	35.42
Sodium	0 - 30 ppm	176.29
Soluble Salts	<1,000 ppm	915.00
Bicarbonate	<60 ppm	151.30
Chloride	<200 ppm	214.00
SAR	<4%	3.72



RECOMMENDATIONS



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Thoughts on the visit

Firstly, thank you for having me to the complex. It is a great area with lots of potential for the future. I can see several areas that you could begin to work on to make the soil, and thus the turfgrass, better in the short term as well as things that will work towards a long term sustainable program. After an initial visit to a new client, I never make any "end-all-be-all" statements. I don't believe that one round of sample collection and lab data is enough to make recommendations that will work forever. There needs to be a routine program set in place with regards to testing that will make it so you can adjust your programs throughout a given year.

I first look for glaring deficiencies in the lab data. Your soils have 2: Phosphorus and Potassium. Neither of these critical elements seem to be naturally plant available in sufficient levels. The Native soil does have more Phosphorus than then Original Mix material but it is still low. Potassium is low in both the Native Soil and Original Mix. Seeing that some of the sod is just a year old, I would highly recommend focusing on these two applications prior to Winter.

You also have what I consider a physical problem with the Original Mix material. It is very much like a concrete sand and your water supplies enough Bicarbonates (or "cement") to bind the soil so tightly that it makes it difficult for any grass or plant to grow properly. We can see that when we try to sample in an existing field.



Notes from the visit

- Collected a sample of the Engineered fields mix.
- Collected a sample of the Native soil from the new Backyard area.
- The particular plant in the front landscape that struggles requires very little water.
- Property is very deficient in Phosphorus and Potassium.
- Engineered fields should be 6 ½" deep.
- Try verti-cutting Bandera Bermudagrass in a circular pattern to work on thatch.

Fertilizer and Product Recommendations

Fields

Phosphorus- 200 pounds of product per acre.(11-55-00)

Potassium- (2) 100 pounds of product per acre. (0-0-50)

*** Use the US 15 acid product at the recommended rates based on titration test.**

Landscape (Two times before Winter)

Phosphorus- 3 pounds of product per 1,000 square feet. (11-55-00)

Potassium-2 pounds of product per 1,000 square feet (0-0-50)