

SUMMER 2017

Data Collection Report
Soil & Water Consulting



Vellano Country Club



SOIL and WATER CONSULTING

Course Name: Vellano Country Club

Date of Sample: June 23, 2017

<u>6/23/17</u>	
Humidity/Air Temperature	56%/80°
Greens Temperature	70°
Fairway Temperature	72°

WATER	Acceptable Range For Water Sample	Potable 6/23/17	Effluent 6/23/17
pH	6.0-6.5	7.71	7.56
EC	<2.25 mmhos/cm	0.49	0.76
Sodium		27.26	92.61
Calcium	20 - 60 ppm	46.20	37.36
Magnesium	10 - 25 ppm	9.44	7.01
Potassium	5 - 20 ppm	1.52	14.59
Phosphorus	0.1 - 0.4 ppm	n/t	1.17
Nitrate	5 - 50 ppm	n/t	5.06
Sulfur	30 - 90 ppm	14.26	44.22
Bicarbonate	<120 ppm	66.79	157.55
Boron	<0.67 ppm	0.08	0.23
Chloride	<177 ppm	90.55	114.38



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TEE	Acceptable Range For Alkaline Soils Sample	18 6/23/17
Organic Matter (Humus)	2 - 3%	1.14
Sulfur	12 - 16 ppm	15.00
Olsen - Phosphorus	13 - 20 ppm	18.00
Calcium - TEC of 6 - 12	1,000 lbs/acre	1,106.00
Magnesium	>7% base saturation or at least 200 lbs/acre	15.41%/152
Potassium - TEC of 0 - 35	100 ppm	56.00
Copper	>0.8 ppm	0.25
Manganese	>1 ppm	1.00
Zinc	>1 - 2 ppm	1.59

FAIRWAY	Acceptable Range For Alkaline Soils Sample	9,18 (avg) 6/23/17
Organic Matter (Humus)	2 - 3%	4.99
Sulfur	12 - 16 ppm	76.00
Olsen - Phosphorus	13 - 20 ppm	16.50
Calcium - TEC of 6 - 12	1,000 lbs/acre	6,202.00
Magnesium	>7% base saturation or at least 200 lbs/acre	12.72%/630
Potassium - TEC of 0 - 35	100 ppm	221.00
Copper	>0.8 ppm	0.81
Manganese	>1 ppm	2.00
Zinc	>1 - 2 ppm	3.11

GREENS	Acceptable Range For Alkaline Soils Sample	12,16,18 (avg) 6/23/17
Organic Matter (Humus)	2 - 3%	0.83
Sulfur	12 - 16 ppm	16.67
Olsen - Phosphorus	13 - 20 ppm	8.00
Calcium - TEC of 6 - 12	1,000 lbs/acre	1,294.00
Magnesium	>7% base saturation or at least 200 lbs/acre	10.05%/98.6
Potassium - TEC of 0 - 35	150 ppm	42.00
Copper	>0.8 ppm	0.49
Manganese	4 ppm or more	1.67
Zinc	>1 - 2 ppm	2.55



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TEE	Acceptable Range For Saturated Paste Sample	18 6/23/17
Nitrate - Ryegrass	5 - 10 ppm	
Nitrate - Bermudagrass	10 -15 ppm	1.80
Phosphorus	2 - 10 ppm	4.86
Potassium	40 - 100 ppm	26.17
Calcium	60 - 200 ppm	42.20
Magnesium	20 - 70 ppm	10.95
Sodium	0 - 30 ppm	93.04
Soluble Salts	<1,920 ppm	522.00
Bicarbonate	<60 ppm	195.23
Chloride	<1,000 ppm	110.00
SAR	<4%	3.30

FAIRWAY	Acceptable Range For Saturated Paste Sample	18 6/23/17
Nitrate - Bermudagrass	10 -15 ppm	<0.5
Phosphorus	2 - 10 ppm	0.55
Potassium	40 - 100 ppm	28.94
Calcium	60 - 200 ppm	141.50
Magnesium	20 - 70 ppm	29.15
Sodium	0 - 30 ppm	221.00
Soluble Salts	<1,920 ppm	1,107.00
Bicarbonate	<60 ppm	241.60
Chloride	<1,000 ppm	193.00
SAR	<4%	4.42

GREENS	Acceptable Range For Saturated Paste Sample	12,16,18 (avg) 6/23/17
Nitrate - Bentgrass	1-3 ppm	<0.5
Phosphorus	2 - 7 ppm	1.23
Potassium	25-40 ppm	35.56
Calcium	50- 75 ppm	73.56
Magnesium	15-30 ppm	11.10
Sodium	0 - 30 ppm	45.13
Soluble Salts	<1,000 ppm	473.33
Bicarbonate	<60 ppm	188.72
Chloride	<200 ppm	85.00
SAR	<4%	1.29



RECOMMENDATIONS



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Thoughts on the course visit

This is quite a golf course! It looks very difficult to play and in so many ways to manage. At this point from one round of sampling and seeing the course for the first time, I will deal mainly with the soil deficiencies. Unfortunately a few samples have been lost but there is enough data to make some recommendations. Overall, the fairways are fine. I would not recommend any expensive bulk applications of fertilizer at this time. The tees and the greens are where you can make some headway for a more reasonable price. The greens looked very healthy but oddly enough for your area, are very low in mineral nutrition. I am sure the Winter rains have had something to do with that.

After you are finished with the weed abatement on the hillsides, aerification on the fairways would go a long way. There was a lot of turf coverage so filling in a lot of bare areas isn't something to worry about.

Let's talk as you have time so you can go over more details and a few thoughts. As you currently work your budget, the amendments I have recommended can always be purchased and stockpiled for one application.



Notes from the visit

- Greens are A-4 with T-1 interseeded.
- Greens Mowing Height- 0.105"
- Recent fertility on the greens was 23-0-20, gypsum and 0-0-50 at aerification 3 weeks prior to sampling. Also, Bent Special and Iron sprayed.
- Wetting agent sprayed the day of my visit.
- Fairway Mowing Height - 0.450"
- Recent fertility on the fairways was 3 0.75#'s of N from 21-0-0 over the past 6 weeks.
- Working on weeds and hillsides.
- Can water as needed.

Fertilizer and Product Recommendations

Tees

Calcium- 500 pounds of product per acre. (Gypsum)

Magnesium/Potassium- 300 pounds of product per acre. (K-mag-0-0-22)

Greens (Monthly applications)

Magnesium- 3 pounds of product per 1,000 square feet. (Pro-Mag)

Potassium- 4 pounds of product per 1,000 square feet (0-0-50)

*** K-Mag (0-0-22) may be a good option to do both with one application.**