



Client: The Summit Golf Club

Summer 2023 Report

	<u>6/21/21</u>	<u>6/21/22</u>	<u>6/16/23</u>
Humidity/Air Temperature	5%/105°	5%/105°	65%/85°
Greens Temperature	(avg)66.5°	(avg)73.5°	(avg)67.8°
Fairway Temperature	(avg)72.8°	(avg)73.3°	(avg)68.5°

	<u>Acceptable Range For Water Sample</u>	<u>Hole #3 6/21/21</u>	<u>Hole #6 6/21/22</u>	<u>Hole # 6/16/23</u>
pH	6.0-6.5	7.79	7.85	7.98
EC	<2.25 mmhos/cm	0.85	0.96	0.93
Sodium		75.60	88.72	83.10
Calcium	20 - 60 ppm	62.71	69.00	67.98
Magnesium	10 - 25 ppm	25.20	23.08	27.97
Potassium	5 - 20 ppm	4.46	3.75	4.45
Sulfur	30 - 90 ppm	187.98	203.07	207.11
Bicarbonate	<120 ppm	185.86	191.50	181.18
Boron	<0.67 ppm	0.12	0.12	0.09
Chloride	<177 ppm	85.10	89.36	90.04

TEE	Acceptable Range For Tissue Sample	13 6/16/23
Nitrogen	2.49%-4.56%	4.09
Phosphorus	0.26%-0.38%	0.64
Potassium	0.95% - 1.97%	2.18
Calcium	0.50%-0.90%	0.77
Magnesium	0.13%-0.16%	0.35
Sodium	622-1709 ppm	1,722.60

FAIRWAY	Acceptable Range For Tissue Sample	13 6/16/23
Nitrogen	2.49%-4.56%	4.24
Phosphorus	0.26%-0.38%	0.81
Potassium	0.95% - 1.97%	3.36
Calcium	0.50%-0.90%	0.61
Magnesium	0.13%-0.16%	0.36
Sodium	622-1709 ppm	2,834.00

GREENS	Acceptable Range For Tissue Sample	4,13(avg) 6/16/23
Nitrogen	3.0%-6.5%	3.96
Phosphorus	0.2%-0.55%	0.52
Potassium	0.86%-2.55%	2.27
Calcium	0.21%-0.50%	0.79
Magnesium	0.09%-0.22%	0.30
Sodium	506- 2264 ppm	2,120.55

TEES	Acceptable Range For Alkaline Soils Sample	4,13(avg) 7/9/20	4,13(avg) 6/16/23
Organic Matter (Humus)	2 - 3%	0.42	1.37
Sulfur	12 - 16 ppm	75.50	27.50
Olsen - Phosphorus	13 - 20 ppm	16.00	23.50
Calcium - TEC of 6 - 12	1,000 lbs/acre	1,623.00	2,494.00
Magnesium	>7% base saturation or at least 200 lbs/acre	14.5%/191	16.13%/327
Potassium - TEC of 0 - 35	100 ppm	69.00	76.50
Manganese	>50 ppm	8.00	16.00

FAIRWAYS	Acceptable Range For Alkaline Soils Sample	4,13(avg) 7/9/20	4,13(avg) 6/16/23
Organic Matter (Humus)	2 - 3%	0.26	1.34
Sulfur	12 - 16 ppm	107.00	99.00
Olsen - Phosphorus	13 - 20 ppm	6.50	33.50
Calcium - TEC of 6 - 12	1,000 lbs/acre	2,048.00	2,332.00
Magnesium	>7% base saturation or at least 200 lbs/acre	13.4%/221	15.32%/294
Potassium - TEC of 0 - 35	100 ppm	88.00	90.00
Manganese	>50 ppm	7.50	11.00

GREENS	Acceptable Range For Alkaline Soils Sample	4,13(avg) 7/9/20	4,13(avg) 6/16/23
Organic Matter (Humus)	2 - 3%	0.72	0.92
Sulfur	12 - 16 ppm	62.50	109.00
Olsen - Phosphorus	13 - 20 ppm	4.00	16.50
Calcium - TEC of 6 - 12	1,000 lbs/acre	1,668.00	1,861.00
Magnesium	>7% base saturation or at least 200 lbs/acre	12.69%/169	14.24%/231
Potassium - TEC of 0 - 35	150 ppm	67.00	83.50
Manganese	>50 ppm	10.00	31.50

TEE	Acceptable Range For Saturated Paste Sample	13 7/9/20	4 6/16/23
Nitrate - Bermudagrass	10-15 ppm	<0.5	<0.5
Phosphorus	2 - 10 ppm	6.05	2.91
Potassium	40 - 100 ppm	31.04	23.83
Calcium	60 - 200 ppm	69.87	88.32
Magnesium	20 - 70 ppm	26.43	28.12
Sodium	0 - 30 ppm	77.70	71.53
Soluble Salts	<1,920 ppm	462.00	575.00
Bicarbonate	<60 ppm	158.95	128.34
Chloride	<1,000 ppm	56.00	47.00
SAR	<4%	2.01	1.70

FAIRWAYS	Acceptable Range For Saturated Paste Sample	13 7/9/20	4 6/16/23
Nitrate - Bermudagrass	10-15 ppm	<0.5	<0.5
Phosphorus	2 - 10 ppm	4.51	2.49
Potassium	40 - 100 ppm	85.70	77.56
Calcium	60 - 200 ppm	201.28	205.19
Magnesium	20 - 70 ppm	74.14	65.85
Sodium	0 - 30 ppm	235.20	176.89
Soluble Salts	<1,920 ppm	1,222.00	1,361.00
Bicarbonate	<60 ppm	211.96	219.54
Chloride	<1,000 ppm	179.00	194.00
SAR	<4%	3.60	2.75

GREENS	Acceptable Range For Saturated Paste Sample	4,13(avg) 7/9/20	4,13(avg) 6/16/23
Nitrate - Tyee/007 Bentgrass	1-3 ppm	<0.5	<0.5
Phosphorus	2 - 7 ppm	2.66	1.53
Potassium	25-40 ppm	39.33	38.65
Calcium	50- 75 ppm	104.85	130.48
Magnesium	15-30 ppm	28.85	38.97
Sodium	0 - 30 ppm	160.40	191.16
Soluble Salts	<1,000 ppm	778.00	1,029.50
Bicarbonate	<60 ppm	108.97	87.44
Chloride	<200 ppm	125.00	173.00
SAR	<4%	3.72	3.77

Nutrient Deficiencies

		K	Na	Mn
TEE	4	84	74	22
TEE	13	69	61	10
FAIRWAY	4	99	117	11
FAIRWAY	13	81	83	11
GREEN	4	94	148	28
GREEN	13	73	142	35

Potassium can be added in the form of 0-0-50 at a rate of 2 pounds of product per 1,000 sq ft for the next four months on greens.

Manganese can be added in the form of Manganese Oxide at a rate of 3 pounds of product per 1,000 sq ft in September, October and November.

Comments and Next Level Cultural Practices

- Vert-cut and topdress greens consistently through the Summer
- Greens data shows it may be time to flush the greens to lower sodium levels. Ideally, you want 2 times as much K as Na. So, not only are the levels slightly low but more is necessary for the proper balance.