



SOIL AND WATER CONSULTING

Data Collection Report

Summer 2019

Date of Collection: 6/19/19

Client: The Summit Club



Testing Results

	<u>6/27/17</u>	<u>6/21/18</u>	<u>6/19/19</u>
Humidity/Air Temperature	5%/108°	4%/104°	15%/97°
Fairway Temperature	82°	81.1°	78.4°
Greens Temperature	80°	79.7°	73.5°

	<u>Acceptable Range For Water Sample</u>	<u>Hole #4 6/27/17</u>	<u>Hole #15 6/21/18</u>	<u>Hole #16 6/19/19</u>
pH	6.0-6.5	6.31	7.63	8.05
EC	<2.25 mmhos/cm	1.46	0.90	0.87
Sodium		151.60	61.39	83.90
Calcium	20 - 60 ppm	94.40	73.53	69.95
Magnesium	10 - 25 ppm	24.51	25.31	22..37
Potassium	5 - 20 ppm	12.65	8.44	4.61
Nitrate	10-25 ppm	4.30	n/t	0.47
Phosphours	0.1-0.4 ppm	0.66	n/t	<0.20
Sulfur	30 - 90 ppm	325.80	177.66	195.12
Bicarbonate	<120 ppm	65.34	205.46	140.26
Boron	<0.67 ppm	0.18	0.10	0.11
Chloride	<177 ppm	191.44	67.06	78.98

<i>TEE</i>	<u>Acceptable Range For Tissue Sample</u>	<u>6 6/19/19</u>
Nitrogen	3.34%-5.10%	3.46
Phosphorus	0.35% - 0.55%	0.87
Potassium	2.0% - 3.42%	2.42
Calcium	0.25%-0.5%	0.81
Magnesium	0.16%-0.32%	0.33
Sodium	229-1107 ppm	1,740.00

<i>FAIRWAY</i>	<u>Acceptable Range For Tissue Sample</u>	<u>6 6/19/19</u>
Nitrogen	3.34%-5.10%	3.52
Phosphorus	0.35% - 0.55%	0.77
Potassium	2.0% - 3.42%	2.69
Calcium	0.25%-0.5%	0.72
Magnesium	0.16%-0.32%	0.33
Sodium	229-1107 ppm	1,850.00

<i>GREENS</i>	<u>Acceptable Range For Tissue Sample</u>	<u>6,15 (avg) 6/19/19</u>
Nitrogen	3.0%-6.5%	4.45
Phosphorus	0.2%-0.55%	0.55
Potassium	0.86%-2.55%	1.81
Calcium	0.21%-0.50%	0.95
Magnesium	0.09%-0.22%	0.31
Sodium	506- 2264 ppm	2,035.00

TEES	Acceptable Range For Alkaline Soils Sample	4 6/27/17	3,12(avg) 6/21/18	6,15(avg) 6/19/19
Organic Matter (Humus)	2 - 3%	0.20	0.44	0.58
Sulfur	12 - 16 ppm	75.00	79.50	46.00
Olsen - Phosphorus	13 - 20 ppm	17.00	18.00	15.00
Calcium - TEC of 6 - 12	1,000 lbs/acre	1,394.00	2,378.00	2,493.00
Magnesium	>7% base saturation or at least 200 lbs/acre	13.10%/154	9.72%/173	11.18%/213
Potassium - TEC of 0 - 35	100 ppm	84.00	73.50	117.00
Manganese	>50 ppm	n/a	9.50	12.50

FAIRWAYS	Acceptable Range For Alkaline Soils Sample	4 6/27/17	3,12(avg) 6/21/18	6,15(avg) 6/19/19
Organic Matter (Humus)	2 - 3%	0.24	0.35	0.54
Sulfur	12 - 16 ppm	202.00	95.50	75.00
Olsen - Phosphorus	13 - 20 ppm	19.00	17.00	23.00
Calcium - TEC of 6 - 12	1,000 lbs/acre	2,004.00	2,267.00	2,029.00
Magnesium	>7% base saturation or at least 200 lbs/acre	11.14%/188	10.79%/185	13.40%/217
Potassium - TEC of 0 - 35	100 ppm	114.00	67.50	118.50
Manganese	>50 ppm	n/a	7.00	8.00

GREENS	Acceptable Range For Alkaline Soils Sample	4 6/27/17	3,12(avg) 6/21/18	6,15(avg) 6/19/19
Organic Matter (Humus)	2 - 3%	0.57	0.76	0.78
Sulfur	12 - 16 ppm	35.00	99.00	96.00
Olsen - Phosphorus	13 - 20 ppm	5.00	8.00	10.00
Calcium - TEC of 6 - 12	1,000 lbs/acre	1,790.00	2,120.00	1,948.00
Magnesium	>7% base saturation or at least 200 lbs/acre	12.29%/208	14.17%/246	13.68%/219
Potassium - TEC of 0 - 35	150 ppm	85.00	84.50	113.00
Manganese	>50 ppm	n/a	12.00	14.00

TEE	Acceptable Range For Saturated Paste Sample	3 6/21/18	6 6/19/19
Nitrate -Bermudagrass	10-15 ppm	21.60	<0.5
Phosphorus	2 - 10 ppm	5.30	3.00
Potassium	40 - 100 ppm	58.41	57.86
Calcium	60 - 200 ppm	76.68	82.81
Magnesium	20 - 70 ppm	20.88	31.20
Sodium	0 - 30 ppm	87.29	102.97
Soluble Salts	<1,920 ppm	776.00	648.00
Bicarbonate	<60 ppm	197.67	202.55
Chloride	<1,000 ppm	69.00	93.00
SAR	<4%	2.28	2.45

FAIRWAY	Acceptable Range For Saturated Paste Sample	3 6/21/18	6 6/19/19
Nitrate -Bermudagrass	10-15 ppm	1.00	<0.5
Phosphorus	2 - 10 ppm	2.60	4.51
Potassium	40 - 100 ppm	74.37	83.97
Calcium	60 - 200 ppm	466.15	162.08
Magnesium	20 - 70 ppm	81.42	62.29
Sodium	0 - 30 ppm	211.32	123.13
Soluble Salts	<1,920 ppm	1,702.00	993.00
Bicarbonate	<60 ppm	183.03	263.56
Chloride	<1,000 ppm	154.00	89.00
SAR	<4%	2.37	2.08

GREENS	Acceptable Range For Saturated Paste Sample	3,12 (avg) 6/21/18	6,15 (avg) 6/19/19
Nitrate - Bentgrass	1-3 ppm	<0.5	<0.5
Phosphorus	2 - 7 ppm	1.74	1.94
Potassium	25-40 ppm	43.93	82.15
Calcium	50- 75 ppm	115.00	131.21
Magnesium	15-30 ppm	38.08	43.94
Sodium	0 - 30 ppm	158.45	173.75
Soluble Salts	<1,000 ppm	950.50	976.50
Bicarbonate	<60 ppm	184.25	167.17
Chloride	<200 ppm	117.50	105.00
SAR	<4%	3.27	3.31