



SOIL AND WATER CONSULTING

Data Collection Report

Spring 2020

Date of Collection: 3/4/20

Client: Canyon Gate Country Club



Testing Results

	<u>3/12/19</u>	<u>3/4/20</u>
Humidity/Air Temperature	70%/65°	19%/70°
Greens Temperature	(avg)49.2°	(avg)45°
Fairway Temperature	(avg)50.15°	(avg)51°

WATER	Acceptable Range For Water Sample	Lake #9 3/12/18	Hole #5 3/12/19	Hole #1 3/4/20
pH	6.0-6.5	7.23	6.87	8.11
EC	<2.25 mmhos/cm	1.84	1.73	0.85
Sodium		218.70	206.30	81.67
Calcium	20 - 60 ppm	70.56	69.94	68.51
Magnesium	10 - 25 ppm	21.42	20.79	22.65
Potassium	5 - 20 ppm	24.58	22.58	5.35
Nitrate	10 - 25 ppm	5.91	11.34	0.10
Phosphorus	5 - 20 ppm	1.61	0.82	<0.20
Sulfur	30 - 90 ppm	212.70	225.06	199.56
Bicarbonate	<120 ppm	301.63	187.42	134.91
Boron	<0.67 ppm	0.28	0.26	0.12
Chloride	<177 ppm	292.59	254.29	82.72

TEE	Acceptable Range For Tissue Sample	1 3/4/20
Nitrogen	3.34%-5.10%	3.96
Phosphorus	0.35% - 0.55%	0.56
Potassium	2.0% - 3.42%	2.44
Calcium	0.25%-0.5%	0.96
Magnesium	0.16%-0.32%	0.38
Sodium	229-1107 ppm	2,510.00

FAIRWAY	Acceptable Range For Tissue Sample	1 3/4/20
Nitrogen	3.34%-5.10%	3.89
Phosphorus	0.35% - 0.55%	0.57
Potassium	2.0% - 3.42%	2.61
Calcium	0.25%-0.5%	0.72
Magnesium	0.16%-0.32%	0.30
Sodium	229-1107 ppm	1,720.00

GREENS	Acceptable Range For Tissue Sample	1,10(avg) 3/4/20
Nitrogen	3.0%-6.5%	3.48
Phosphorus	0.2%-0.55%	0.44
Potassium	0.86%-2.55%	2.33
Calcium	0.21%-0.50%	0.73
Magnesium	0.09%-0.22%	0.32
Sodium	506- 2264 ppm	1,125.00

TEES	Acceptable Range For Alkaline Soils Sample	5,14(avg) 3/12/19	1,10(avg) 3/4/20
Organic Matter (Humus)	2 - 3%	3.89	3.55
Sulfur	12 - 16 ppm	20.00	60.50
Olsen - Phosphorus	13 - 20 ppm	39.50	34.50
Calcium - TEC of 6 - 12	1,000 lbs/acre	4,377.00	4,198.00
Magnesium	>7% base saturation or at least 200 lbs/acre	16.65%/634	17.45%/625
Potassium - TEC of 0 - 35	100 ppm	321.50	235.50
Manganese	>50 ppm	16.50	11.50

FAIRWAYS	Acceptable Range For Alkaline Soils Sample	5,14(avg) 3/12/19	1,10(avg) 3/4/20
Organic Matter (Humus)	2 - 3%	5.76	5.26
Sulfur	12 - 16 ppm	30.50	91.00
Olsen - Phosphorus	13 - 20 ppm	66.00	77.50
Calcium - TEC of 6 - 12	1,000 lbs/acre	5,295.00	5,415.00
Magnesium	>7% base saturation or at least 200 lbs/acre	18.99%/897	19.25%/892
Potassium - TEC of 0 - 35	100 ppm	346.00	237.50
Manganese	>50 ppm	16.00	16.50

GREENS	Acceptable Range For Alkaline Soils Sample	5,14(avg) 3/12/19	1,10(avg) 3/4/20
Organic Matter (Humus)	2 - 3%	0.22	0.21
Sulfur	12 - 16 ppm	16.00	19.50
Olsen - Phosphorus	13 - 20 ppm	5.00	4.50
Calcium - TEC of 6 - 12	1,000 lbs/acre	1,370.00	1,839.00
Magnesium	>7% base saturation or at least 200 lbs/acre	10.37%/109	9.22%/124
Potassium - TEC of 0 - 35	150 ppm	74.00	53.00
Manganese	>50 ppm	27.50	29.50

TEES	Acceptable Range For Saturated Paste Sample	5 3/12/19	1 3/4/20
Nitrate - Bermudagrass	10 -15 ppm	<0.5	<0.5
Phosphorus	2 - 10 ppm	4.72	3.66
Potassium	40 - 100 ppm	18.37	30.44
Calcium	60 - 200 ppm	39.58	130.62
Magnesium	20 - 70 ppm	15.05	48.54
Sodium	0 - 30 ppm	120.41	112.34
Soluble Salts	<1,920 ppm	535.00	739.00
Bicarbonate	<60 ppm	183.03	272.19
Chloride	<1,000 ppm	83.00	86.00
SAR	<4%	4.13	2.13

FAIRWAYS	Acceptable Range For Saturated Paste Sample	5 3/12/19	1 3/4/20
Nitrate - Bermudagrass	10 -15 ppm	<0.5	<0.5
Phosphorus	2 - 10 ppm	5.72	2.89
Potassium	40 - 100 ppm	22.85	39.42
Calcium	60 - 200 ppm	56.04	122.96
Magnesium	20 - 70 ppm	22.36	48.56
Sodium	0 - 30 ppm	137.61	118.88
Soluble Salts	<1,920 ppm	646.00	780.00
Bicarbonate	<60 ppm	261.12	258.09
Chloride	<1,000 ppm	85.00	109.00
SAR	<4%	3.93	2.30

GREENS	Acceptable Range For Saturated Paste Sample	5,14(avg) 3/12/19	1,10(avg) 3/4/20
Nitrate - Dominator Bentgrass	1-3 ppm	<0.5	<0.5
Phosphorus	2 - 7 ppm	3.50	2.26
Potassium	25-40 ppm	34.39	16.27
Calcium	50- 75 ppm	22.13	53.49
Magnesium	15-30 ppm	7.07	14.22
Sodium	0 - 30 ppm	55.35	48.93
Soluble Salts	<1,000 ppm	284.00	340.00
Bicarbonate	<60 ppm	97.62	131.22
Chloride	<200 ppm	33.50	23.50
SAR	<4%	2.64	1.54