



SOIL AND WATER CONSULTING

Data Collection Report

Spring 2022

Date of Collection: 3/16/22

Client: Anthem Country Club



Testing Results

	<u>3/22/21</u>	<u>3/16/22</u>
Humidity/Air Temperature	12%/70°	15%/80°
Greens Temperature	(avg)49.73°	(avg)52.6°
Fairway Temperature	(avg)52.3°	(avg)54.34°

WATER	Acceptable Range For Water Sample	Ironwood Course 3/22/21	Persimmon Course 3/22/21	Persimmon Course 3/16/22
EC	<2.25 mmhos/cm	1.57	1.64	1.68
Sodium		221.00	230.60	289.80
Calcium	20 - 60 ppm	84.19	84.07	72.87
Magnesium	10 - 25 ppm	28.45	29.19	27.31
Potassium	5 - 20 ppm	16.11	17.77	16.97
Phosphorus	0.1 - 0.4 ppm	<0.20	<0.20	<0.20
Nitrate	5 - 50 ppm	4.04	3.60	4.29
Sulfur	30 - 90 ppm	253.71	257.91	291.75
Bicarbonate	<120 ppm	184.30	184.30	127.43
Boron	<0.67 ppm	0.30	0.30	0.30
Chloride	<177 ppm	259.91	289.69	317.27

IRONWOOD FAIRWAYS	Acceptable Range For Alkaline Soils Sample	2,5,10,12(avg) 3/22/21	1,6,9,18(avg) 3/16/22
Organic Matter (Humus)	2 - 3%	4.47	4.05
Sulfur	12 - 16 ppm	875.25	320.50
Olsen - Phosphorus	13 - 20 ppm	17.75	13.50
Calcium - TEC of 6 - 12	1,000 lbs/acre	6,779.00	5,320.00
Magnesium	>7% base saturation or at least 200 lbs/acre	12.95%/742	11.32%/481
Potassium - TEC of 0 - 35	100 ppm	364.50	220.25
Manganese	>50 ppm	35.75	23.50

IRONWOOD GREENS	Acceptable Range For Alkaline Soils Sample	2,5,10,12(avg) 3/22/21	1,6,9,18(avg) 3/16/22
Organic Matter (Humus)	2 - 3%	0.41	0.47
Sulfur	12 - 16 ppm	23.75	18.50
Olsen - Phosphorus	13 - 20 ppm	3.50	4.50
Calcium - TEC of 6 - 12	1,000 lbs/acre	1,360.50	1,447.50
Magnesium	>7% base saturation or at least 200 lbs/acre	14.31%/179	14.36%/196
Potassium - TEC of 0 - 35	150 ppm	138.50	186.00
Manganese	>50 ppm	12.75	16.50

IRONWOOD FAIRWAYS	Acceptable Range For Saturated Paste Sample	2,5,10,12(avg) 3/22/21	1,6,9,18(avg) 3/16/22
Nitrate - Ryegrass	5 - 10 ppm	6.90	<0.5
Phosphorus	2 - 10 ppm	0.43	1.03
Potassium	40 - 100 ppm	63.51	61.26
Calcium	60 - 200 ppm	310.92	298.83
Magnesium	20 - 70 ppm	79.16	65.51
Sodium	0 - 30 ppm	443.12	312.91
Soluble Salts	<1,920 ppm	2,154.25	1,567.25
Bicarbonate	<60 ppm	88.44	209.89
Chloride	<1,000 ppm	556.75	241.75
SAR	<4%	5.68	4.45

IRONWOOD GREENS	Acceptable Range For Saturated Paste Sample	2,5,10,12(avg) 3/22/21	1,6,9,18(avg) 3/16/22
Nitrate - Mini verde	1-3 ppm	2.08	1.08
Phosphorus	2 - 7 ppm	1.22	1.34
Potassium	25-40 ppm	12.31	16.61
Calcium	50- 75 ppm	17.71	16.49
Magnesium	15-30 ppm	5.91	6.16
Sodium	0 - 30 ppm	90.15	94.83
Soluble Salts	<1,000 ppm	363.00	367.50
Bicarbonate	<60 ppm	50.64	112.48
Chloride	<200 ppm	67.75	62.75
SAR	<4%	4.95	5.07

PERSIMMON FAIRWAYS	Acceptable Range For Alkaline Soils Sample	1,5,9,10(avg) 3/22/21	3,11,14,18(avg) 3/16/22
Organic Matter (Humus)	2 - 3%	4.89	3.75
Sulfur	12 - 16 ppm	1,062.00	366.75
Olsen - Phosphorus	13 - 20 ppm	42.25	34.00
Calcium - TEC of 6 - 12	1,000 lbs/acre	6,557.50	4,288.50
Magnesium	>7% base saturation or at least 200 lbs/acre	11.46%/585	12.48%/436.5
Potassium - TEC of 0 - 35	100 ppm	258.00	178.00
Manganese	>50 ppm	26.75	31.25

PERSIMMON GREENS	Acceptable Range For Alkaline Soils Sample	1,5,9,10(avg) 3/22/21	3,11,14,18(avg) 3/16/22
Organic Matter (Humus)	2 - 3%	1.29	1.26
Sulfur	12 - 16 ppm	57.00	53.00
Olsen - Phosphorus	13 - 20 ppm	12.00	11.00
Calcium - TEC of 6 - 12	1,000 lbs/acre	1,988.00	2,080.50
Magnesium	>7% base saturation or at least 200 lbs/acre	18.12%/353	17.52%/362
Potassium - TEC of 0 - 35	150 ppm	172.25	246.25
Manganese	>50 ppm	29.75	37.75

PERSIMMON FAIRWAYS	Acceptable Range For Saturated Paste Sample	1,5,9,10(avg) 3/22/21	3,11,14,18(avg) 3/16/22
Nitrate - Ryegrass	5 - 10 ppm	9.38	<0.5
Phosphorus	2 - 10 ppm	1.31	1.37
Potassium	40 - 100 ppm	44.94	55.16
Calcium	60 - 200 ppm	319.24	386.18
Magnesium	20 - 70 ppm	66.23	76.24
Sodium	0 - 30 ppm	301.03	293.39
Soluble Salts	<1,920 ppm	1,818.25	1,832.00
Bicarbonate	<60 ppm	68.66	157.62
Chloride	<1,000 ppm	301.25	219.75
SAR	<4%	4.01	3.59

PERSIMMON GREENS	Acceptable Range For Saturated Paste Sample	1,5,9,10(avg) 3/22/21	3,11,14,18(avg) 3/16/22
Nitrate - Mini verde	1-3 ppm	3.80	1.55
Phosphorus	2 - 7 ppm	1.36	1.09
Potassium	25-40 ppm	17.50	36.33
Calcium	50- 75 ppm	44.18	50.64
Magnesium	15-30 ppm	14.17	16.99
Sodium	0 - 30 ppm	161.17	178.28
Soluble Salts	<1,000 ppm	682.50	718.75
Bicarbonate	<60 ppm	102.71	119.16
Chloride	<200 ppm	176.75	153.25
SAR	<4%	5.41	5.57

IRONWOOD GREEN				
		Green #18 0- 1 1/2"	Green #18 Below 1 1/2"	Topdressing Sand 3/22/2021
	Clay	0.20	0.20	0.70
	Silt	9.80	2.20	0.50
	Sand	87.60	97.50	98.80
	Gravel	2.40	0.10	0.00
	Organic Material	18.38	0.54	0.14
	<u>Sieve #:</u>			
	Fine Gravel 10	2.40	0.10	0.00
	Very Coarse Sand 18	6.30	5.90	5.30
	Coarse Sand 35	30.00	34.30	34.70
	Medium Sand 60	38.30	41.70	44.70
	Fine Sand 100	9.70	11.10	11.80
	Very Fine Sand 140	2.60	3.30	2.00
	Very Fine Sand 270	0.80	1.00	0.30
	Infiltration Rate	n/r	4.5"	n/r



PERSIMMON GREEN				
		Green #4 0-3"	Green #4 Below 3"	Topdressing Sand 3/22/2021
	Clay	1.20	1.20	0.70
	Silt	12.20	3.80	0.50
	Sand	85.30	95.00	98.80
	Gravel	1.30	0.00	0.00
	Organic Material	12.77	1.07	0.14
	<u>Sieve #:</u>			
	Fine Gravel 10	1.30	0.00	0.00
	Very Coarse Sand 18	5.10	8.90	5.30
	Coarse Sand 35	28.00	38.00	34.70
	Medium Sand 60	35.00	33.40	44.70
	Fine Sand 100	13.30	9.70	11.80
	Very Fine Sand 140	2.60	3.20	2.00
	Very Fine Sand 270	1.30	1.60	0.30
	Infiltration Rate	n/r	3.6"	n/r

