

Client: Anthem Country Club

Spring 2024 Report

	<u>3/16/22</u>	<u>3/24/23</u>	<u>3/11/24</u>
Humidity/Air			
Temperature	15%/80°	30%/63°	40%/70°
Greens			
Temperature	(avg)52.6°	(avg)58.2°	(avg)49.5°
Fairway			
Temperature	(avg)54.34°	(avg)54.2°	(avg)51°

WATER	Acceptable Range For Water Sample	Persimmon Course <u>3/16/22</u>	Ironwood Course <u>3/24/23</u>	Ironwood Lake #10 <u>3/11/24</u>	Persimmon Course <u>3/27/24</u>
EC	<2.25 mmhos/cm	1.68	0.60	1.62	
Sodium		289.80	218.87	231.99	
Calcium	20 - 60 ppm	72.87	74.93	82.88	
Magnesium	10 - 25 ppm	27.31	29.44	27.89	
Potassium	5 - 20 ppm	16.97	17.10	15.01	
Phosphorus	0.1 - 0.4 ppm	<0.20	<0.20	0.43	
Nitrate	5 - 50 ppm	4.29	1.29	3.20	
Sulfur	30 - 90 ppm	291.75	301.11	282.14	
Bicarbonate	<120 ppm	127.43	153.75	202.01	
Boron	<0.67 ppm	0.30	0.35	0.32	
Chloride	<177 ppm	317.27	302.46	301.78	

IRONWOOD TEES	Acceptable Range For Alkaline Soils Sample	2,5,10,12(avg) 3/22/21	2,5,10,12(avg) 3/24/23	6,9,18(avg) 3/11/24
Organic Matter (Humus)	2 - 3%	n/r	n/r	3.10
Sulfur	12 - 16 ppm	n/r	n/r	51.00
Olsen - Phosphorus	13 - 20 ppm	n/r	n/r	21.33
Calcium - TEC of 6 - 12	1,000 lbs/acre	n/r	n/r	3,324.67
	>7% base saturation or at least 200 lbs/acre	n/r	n/r	18.08%/561.33
Magnesium		n/r	n/r	
Potassium - TEC of 0 - 35	100 ppm	n/r	n/r	272.00
Manganese	>50 ppm	n/r	n/r	51.33

IRONWOOD FAIRWAYS	Acceptable Range For Alkaline Soils Sample	2,5,10,12(avg) 3/22/21	2,5,10,12(avg) 3/24/23	6,9,18(avg) 3/11/24
Organic Matter (Humus)	2 - 3%	4.47	5.11	5.42
Sulfur	12 - 16 ppm	875.25	203.25	410.00
Olsen - Phosphorus	13 - 20 ppm	17.75	21.75	36.67
Calcium - TEC of 6 - 12	1,000 lbs/acre	6,779.00	4,780.00	5,876.00
	>7% base saturation or at least 200 lbs/acre	12.95%/742	13.98%/574	14.2%/720
Magnesium				
Potassium - TEC of 0 - 35	100 ppm	364.50	296.25	384.33
Manganese	>50 ppm	35.75	19.50	27.67

IRONWOOD GREENS	Acceptable Range For Alkaline Soils Sample	2,5,10,12(avg) 3/22/21	2,5,10,12(avg) 3/24/23	6,9,18(avg) 3/11/24
Organic Matter (Humus)	2 - 3%	0.41	0.63	0.67
Sulfur	12 - 16 ppm	23.75	7.63	29.00
Olsen - Phosphorus	13 - 20 ppm	3.50	8.94	7.33
Calcium - TEC of 6 - 12	1,000 lbs/acre	1,360.50	1,444.38	1,359.33
	>7% base saturation or at least 200 lbs/acre	14.31%/179	18.14%/243.50	16.3%/220
Magnesium				
Potassium - TEC of 0 - 35	150 ppm	138.50	236.81	222.67
Manganese	>50 ppm	12.75	19.50	25.33

IRONWOOD TEES	Acceptable Range For Saturated Paste Sample	2,5,10,12(avg) 3/22/21	2,5,10,12(avg) 3/24/23	6,18(avg) 3/11/24
Nitrate - Ryegrass	5 - 10 ppm	6.90	<0.5	33.45
Phosphorus	2 - 10 ppm	0.43	1.51	7.02
Potassium	40 - 100 ppm	63.51	69.65	37.82
Calcium	60 - 200 ppm	310.92	228.13	61.46
Magnesium	20 - 70 ppm	79.16	59.02	20.96
Sodium	0 - 30 ppm	443.12	359.79	165.09
Soluble Salts	<1,920 ppm	2,154.25	1,582.75	812.50
Bicarbonate	<60 ppm	88.44	241.29	142.05
Chloride	<1,000 ppm	556.75	253.75	175.00
SAR	<4%	5.68	5.51	4.65

IRONWOOD FAIRWAYS	Acceptable Range For Saturated Paste Sample	2,5,10,12(avg) 3/22/21	2,5,10,12(avg) 3/24/23	6,18(avg) 3/11/24
Nitrate - Ryegrass	5 - 10 ppm	6.90	<0.5	19.70
Phosphorus	2 - 10 ppm	0.43	1.51	1.14
Potassium	40 - 100 ppm	63.51	69.65	66.76
Calcium	60 - 200 ppm	310.92	228.13	239.29
Magnesium	20 - 70 ppm	79.16	59.02	59.61
Sodium	0 - 30 ppm	443.12	359.79	343.67
Soluble Salts	<1,920 ppm	2,154.25	1,582.75	1,734.00
Bicarbonate	<60 ppm	88.44	241.29	134.40
Chloride	<1,000 ppm	556.75	253.75	264.50
SAR	<4%	5.68	5.51	5.10

IRONWOOD GREENS	Acceptable Range For Saturated Paste Sample	2,5,10,12(avg) 3/22/21	2,5,10,12(avg) 3/24/23	6,18(avg) 3/11/24
Nitrate - Mini verde	1-3 ppm	2.08	<0.5	<0.5
Phosphorus	2 - 7 ppm	1.22	3.82	5.08
Potassium	25-40 ppm	12.31	20.89	25.98
Calcium	50- 75 ppm	17.71	15.61	21.36
Magnesium	15-30 ppm	5.91	6.76	8.29
Sodium	0 - 30 ppm	90.15	61.49	83.36
Soluble Salts	<1,000 ppm	363.00	275.25	390.00
Bicarbonate	<60 ppm	50.64	132.35	91.77
Chloride	<200 ppm	67.75	19.75	54.50
SAR	<4%	4.95	3.29	3.87

PERSIMMON TEES	Acceptable Range For Alkaline Soils Sample	1,5,9,10(avg) 3/22/21	1,9,10,15(avg) 3/24/23	3,11,14(avg) 3/11/24
Organic Matter (Humus)	2 - 3%	n/r	n/r	3.45
Sulfur	12 - 16 ppm	n/r	n/r	49.67
Olsen - Phosphorus	13 - 20 ppm	n/r	n/r	14.33
Calcium - TEC of 6 - 12	1,000 lbs/acre	n/r	n/r	3,518.67
Magnesium	>7% base saturation or at least 200 lbs/acre	n/r	n/r	17.7%539.33
Potassium - TEC of 0 - 35	100 ppm	n/r	n/r	183.67
Manganese	>50 ppm	n/r	n/r	24.67

PERSIMMON FAIRWAYS	Acceptable Range For Alkaline Soils Sample	1,5,9,10(avg) 3/22/21	1,9,10,15(avg) 3/24/23	3,11,14(avg) 3/11/24
Organic Matter (Humus)	2 - 3%	4.89	5.49	5.44
Sulfur	12 - 16 ppm	1,062.00	636.75	453.00
Olsen - Phosphorus	13 - 20 ppm	42.25	47.50	64.33
Calcium - TEC of 6 - 12	1,000 lbs/acre	6,557.50	5,418.00	5,113.33
Magnesium	>7% base saturation or at least 200 lbs/acre	11.46%/585	12.28%/510	13.8%/578
Potassium - TEC of 0 - 35	100 ppm	258.00	254.00	268.00
Manganese	>50 ppm	26.75	27.75	44.00

PERSIMMON GREENS	Acceptable Range For Alkaline Soils Sample	1,5,9,10(avg) 3/22/21	1,9,10,15(avg) 3/24/23	3,11,14(avg) 3/11/24
Organic Matter (Humus)	2 - 3%	1.29	1.59	1.68
Sulfur	12 - 16 ppm	57.00	27.75	38.67
Olsen - Phosphorus	13 - 20 ppm	12.00	12.00	8.33
Calcium - TEC of 6 - 12	1,000 lbs/acre	1,988.00	1,768.00	1,951.33
Magnesium	>7% base saturation or at least 200 lbs/acre	18.12%/353	20.34%/358	22.89%/481.33
Potassium - TEC of 0 - 35	150 ppm	172.25	253.00	288.67
Manganese	>50 ppm	29.75	37.00	56.67

PERSIMMON TEES	Acceptable Range For Saturated Paste Sample	1,5,9,10(avg) 3/22/21	1,9,10,15(avg) 3/24/23	3,14(avg) 3/11/24
Nitrate - Ryegrass	5 - 10 ppm	9.38	<0.5	25.35
Phosphorus	2 - 10 ppm	1.31	3.48	4.74
Potassium	40 - 100 ppm	44.94	57.05	27.89
Calcium	60 - 200 ppm	319.24	323.77	64.56
Magnesium	20 - 70 ppm	66.23	64.45	22.81
Sodium	0 - 30 ppm	301.03	177.61	165.32
Soluble Salts	<1,920 ppm	1,818.25	1,335.50	780.50
Bicarbonate	<60 ppm	68.66	199.97	118.53
Chloride	<1,000 ppm	301.25	87.25	178.50
SAR	<4%	4.01	2.60	4.52

PERSIMMON FAIRWAYS	Acceptable Range For Saturated Paste Sample	1,5,9,10(avg) 3/22/21	1,9,10,15(avg) 3/24/23	3,14(avg) 3/11/24
Nitrate - Ryegrass	5 - 10 ppm	9.38	<0.5	21.40
Phosphorus	2 - 10 ppm	1.31	3.48	3.52
Potassium	40 - 100 ppm	44.94	57.05	53.21
Calcium	60 - 200 ppm	319.24	323.77	160.31
Magnesium	20 - 70 ppm	66.23	64.45	37.61
Sodium	0 - 30 ppm	301.03	177.61	242.92
Soluble Salts	<1,920 ppm	1,818.25	1,335.50	1,252.50
Bicarbonate	<60 ppm	68.66	199.97	152.79
Chloride	<1,000 ppm	301.25	87.25	234.50
SAR	<4%	4.01	2.60	4.52

PERSIMMON GREENS	Acceptable Range For Saturated Paste Sample	1,5,9,10(avg) 3/22/21	1,9,10,15(avg) 3/24/23	3,14(avg) 3/11/24
Nitrate - Mini verde	1-3 ppm	3.80	<0.5	0.70
Phosphorus	2 - 7 ppm	1.36	4.30	5.50
Potassium	25-40 ppm	17.50	30.54	31.45
Calcium	50- 75 ppm	44.18	23.62	25.60
Magnesium	15-30 ppm	14.17	8.72	11.18
Sodium	0 - 30 ppm	161.17	85.36	115.33
Soluble Salts	<1,000 ppm	682.50	388.25	389.00
Bicarbonate	<60 ppm	102.71	111.07	104.35
Chloride	<200 ppm	176.75	34.00	93.00
SAR	<4%	5.41	3.83	4.81

Nutrient Deficiencies

		OM (%)	P
IRONWOOD COURSE	GREEN	0.64	6
IRONWOOD COURSE	GREEN	0.65	8
IRONWOOD COURSE	GREEN	0.72	8
PERSIMMON COURSE	GREEN	1.95	6
PERSIMMON COURSE	GREEN	1.26	13
PERSIMMON COURSE	GREEN	1.84	6

No Fertilizer or amendments needed at this time

Comments and Next Level Cultural Practices

- The main difference between Persimmon Course and Ironwood Course greens is the much higher organic material on Persimmon greens
- Although the Phosphorus levels look slightly low on the soil's tests, the Saturated Pastes do show plenty of availability
- The tees were sampled for the first time. They seem like the fairway soils but with the sandier material on top from topdressing and divot repair
- The water samples were the same as in the previous sample collections