



SOIL AND WATER CONSULTING

Data Collection Report

Spring 2023

Date of Collection: 3/24/22

Client: Anthem Country Club



Testing Results

	<u>3/22/21</u>	<u>3/16/22</u>	<u>3/24/23</u>
Humidity/Air Temperature	12%/70°	15%/80°	30%/63°
Greens Temperature	(avg)49.73°	(avg)52.6°	(avg)58.2°
Fairway Temperature	(avg)52.3°	(avg)54.34°	(avg)54.2°

WATER	Acceptable Range For Water Sample	Ironwood Course 3/22/21	Persimmon Course 3/22/21	Persimmon Course 3/16/22	Ironwood Course 3/24/23
EC	<2.25 mmhos/cm	1.57	1.64	1.68	0.60
Sodium		221.00	230.60	289.80	218.87
Calcium	20 - 60 ppm	84.19	84.07	72.87	74.93
Magnesium	10 - 25 ppm	28.45	29.19	27.31	29.44
Potassium	5 - 20 ppm	16.11	17.77	16.97	17.10
Phosphorus	0.1 - 0.4 ppm	<0.20	<0.20	<0.20	<0.20
Nitrate	5 - 50 ppm	4.04	3.60	4.29	1.29
Sulfur	30 - 90 ppm	253.71	257.91	291.75	301.11
Bicarbonate	<120 ppm	184.30	184.30	127.43	153.75
Boron	<0.67 ppm	0.30	0.30	0.30	0.35
Chloride	<177 ppm	259.91	289.69	317.27	302.46

IRONWOOD FAIRWAYS	Acceptable Range For Alkaline Soils Sample	2,5,10,12(avg) 3/22/21	2,5,10,12(avg) 3/24/23
Organic Matter (Humus)	2 - 3%	4.47	5.12
Sulfur	12 - 16 ppm	875.25	203.25
Olsen - Phosphorus	13 - 20 ppm	17.75	21.75
Calcium - TEC of 6 - 12	1,000 lbs/acre	6,779.00	4,780.00
Magnesium	>7% base saturation or at least 200 lbs/acre	12.95%/742	13.98%/574
Potassium - TEC of 0 - 35	100 ppm	364.50	296.25
Manganese	>50 ppm	35.75	33.25

IRONWOOD GREENS	Acceptable Range For Alkaline Soils Sample	2,5,10,12(avg) 3/22/21	2,5,10,12(avg) 3/24/23
Organic Matter (Humus)	2 - 3%	0.41	0.62
Sulfur	12 - 16 ppm	23.75	7.50
Olsen - Phosphorus	13 - 20 ppm	3.50	7.75
Calcium - TEC of 6 - 12	1,000 lbs/acre	1,360.50	1,411.50
Magnesium	>7% base saturation or at least 200 lbs/acre	14.31%/179	18.14%/243.50
Potassium - TEC of 0 - 35	150 ppm	138.50	214.75
Manganese	>50 ppm	12.75	21.00

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

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

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

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

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

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