



Client: Anaheim Hills Golf Course
Fall 2024 Report

<u>9/10/24</u>		
Humidity/Air Temperature	88%/79°	
Greens Temperature	(avg)67°	
Fairway Temperature	(avg)74°	

WATER	Acceptable Range For Water Sample	Hole #2 9/10/24
pH	6.3-6.5	8.03
EC	<2.25 mmhos/cm	1.05
Sodium		100.40
Calcium	20 - 60 ppm	64.76
Magnesium	10 - 25 ppm	26.72
Potassium	5 - 20 ppm	5.04
Sulfur	30 - 90 ppm	234.41
Bicarbonate	<120 ppm	156.19
Boron	<0.67 ppm	0.25
Chloride	<177 ppm	109.27



SOIL AND WATER CONSULTING

TEE	Acceptable Range For Tissue Sample	2 9/10/24
Nitrogen	2.49%-4.56%	n/r
Phosphorus	0.26%-0.38%	n/r
Potassium	0.95% - 1.97%	n/r
Calcium	0.50%-0.90%	n/r
Magnesium	0.13%-0.16%	n/r
Sodium	622-1709 ppm	n/r

FAIRWAY	Acceptable Range For Tissue Sample	2 9/10/24
Nitrogen	2.49%-4.56%	n/r
Phosphorus	0.26%-0.38%	n/r
Potassium	0.95% - 1.97%	n/r
Calcium	0.50%-0.90%	n/r
Magnesium	0.13%-0.16%	n/r
Sodium	622-1709 ppm	n/r

GREENS	Acceptable Range For Tissue Sample	2,11(avg) 9/10/24
Nitrogen	3.0%-6.5%	n/r
Phosphorus	0.2%-0.55%	n/r
Potassium	0.86%-2.55%	n/r
Calcium	0.21%-0.50%	n/r
Magnesium	0.09%-0.22%	n/r
Sodium	506- 2264 ppm	n/r

TEES	Acceptable Range For Alkaline Soils Sample	11,16(avg) 9/10/24
Organic Matter (Humus)	2 - 3%	6.01
Sulfur	12 - 16 ppm	128.50
Olsen - Phosphorus	13 - 20 ppm	69.50
Calcium - TEC of 6 - 12	1,000 lbs/acre	2,964.00
Magnesium	>7% base saturation or at least 200 lbs/acre	18.45%/502
Potassium - TEC of 0 - 35	100 ppm	123.50
Manganese	>50 ppm	12.50

FAIRWAYS	Acceptable Range For Alkaline Soils Sample	11,16(avg) 9/10/24
Organic Matter (Humus)	2 - 3%	4.40
Sulfur	12 - 16 ppm	231.00
Olsen - Phosphorus	13 - 20 ppm	13.00
Calcium - TEC of 6 - 12	1,000 lbs/acre	3,013.00
Magnesium	>7% base saturation or at least 200 lbs/acre	21.86%/1,111
Potassium - TEC of 0 - 35	100 ppm	142.00
Manganese	>50 ppm	7.50

GREENS	Acceptable Range For Alkaline Soils Sample	7,11(avg) 9/10/24	10,16(avg) 9/10/24
Organic Matter (Humus)	2 - 3%	1.46	0.76
Sulfur	12 - 16 ppm	60.50	23.00
Olsen - Phosphorus	13 - 20 ppm	19.00	25.00
Calcium - TEC of 6 - 12	1,000 lbs/acre	1,488.00	912.00
Magnesium	>7% base saturation or at least 200 lbs/acre	17.52%/231	22.73%/191
Potassium - TEC of 0 - 35	150 ppm	62.00	32.00
Manganese	>50 ppm	53.50	6.50

TEE	Acceptable Range For Saturated Paste Sample	16 9/10/24
Nitrate -Bermudagrass	5 - 10 ppm	15.20
Phosphorus	2 - 10 ppm	1.40
Potassium	40 - 100 ppm	25.03
Calcium	60 - 200 ppm	79.42
Magnesium	20 - 70 ppm	27.42
Sodium	0 - 30 ppm	124.51
Soluble Salts	<1,920 ppm	689.00
Bicarbonate	<60 ppm	104.63
Chloride	<1,000 ppm	97.00
SAR	<4%	3.07

FAIRWAY	Acceptable Range For Saturated Paste Sample	16 9/10/24
Nitrate - Kikuyugrass	10-15 ppm	1.80
Phosphorus	2 - 10 ppm	1.55
Potassium	40 - 100 ppm	45.65
Calcium	60 - 200 ppm	180.01
Magnesium	20 - 70 ppm	59.28
Sodium	0 - 30 ppm	165.96
Soluble Salts	<1,920 ppm	1,290.00
Bicarbonate	<60 ppm	126.38
Chloride	<1,000 ppm	80.00
SAR	<4%	2.74

GREENS	Acceptable Range For Saturated Paste Sample	11 9/10/24	10,16(avg) 9/10/24
Nitrate -poa/ Bentgrass	1-3 ppm	11.40	2.15
Phosphorus	2 - 7 ppm	1.02	1.70
Potassium	25-40 ppm	26.22	11.68
Calcium	50- 75 ppm	53.38	14.32
Magnesium	15-30 ppm	15.56	5.16
Sodium	0 - 30 ppm	107.52	42.06
Soluble Salts	<1,000 ppm	590.00	231.50
Bicarbonate	<60 ppm	39.12	54.13
Chloride	<200 ppm	99.00	26.00
SAR	<4%	3.33	2.42

Nutrient Deficiencies

		Ca	K	Mn
GREEN	7	1372	66	62
GREEN	10	904	24	6
GREEN	11	1604	58	45
GREEN	16	920	40	7

Calcium can be added in the form of gypsum at a rate of 10 pounds of product per 1,000 sq ft one time to green #10 and #16.

Potassium can be added in the form of 0-0-50 at a rate of 2 pounds of product per 1,000 sq ft in October, November and December.

Manganese can be added in the form of Manganese Oxide or Sulfate at a rate of 3 pounds of product per 1,000 sq ft monthly to green #10 and 16.

Comments and Next Level Cultural Practices

- I put the new greens (#10 & #16) against the older existing greens (#7 & 11) to show that the sand-based greens will lag in the base nutrients such as Ca, K and Mn. The Calcium levels in the new greens are close, so one application may be enough through Winter. The other deficiencies can be worked on over the next 6 months
- This was the first time collecting samples on tees and fairways. There are no current deficiencies and nitrogen levels are sufficient to high