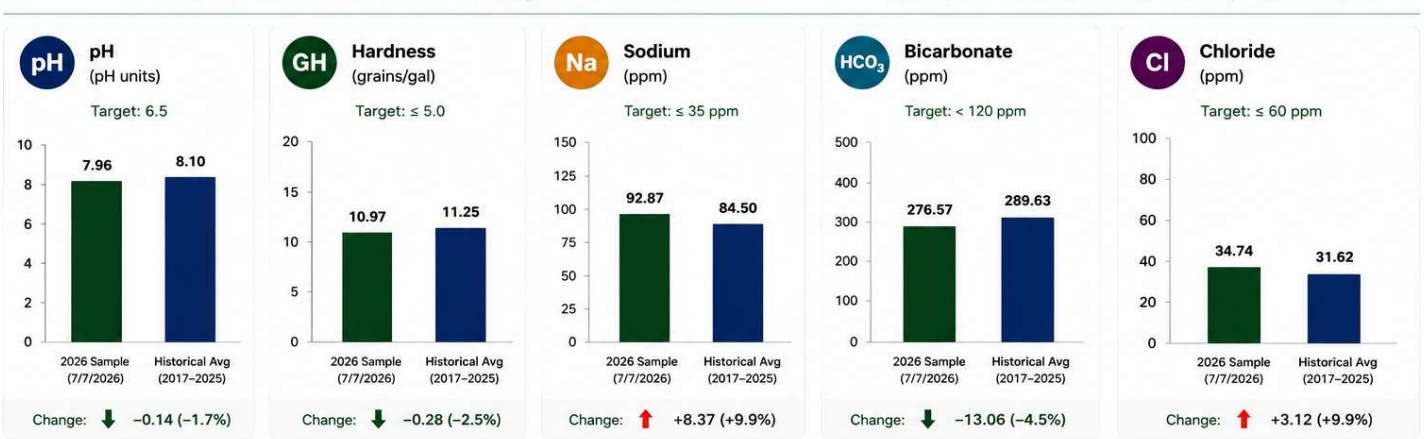
IRRIGATION WATER

COYOTE SPRINGS GOLF CLUB

IRRIGATION WATER QUALITY COMPARISON

2026 Sample vs. Historical Average (2017–2025)

DATE OF VISIT: June 18, 2026



Parameter	Target / Benchmark	2026 Sample (7/7/2026)	Historical Average (2017–2025)	Change	Change (%)	Comparison
pH **pH**	6.5	7.96	8.10	–0.14	–1.7%	Lower (Above Target)
GH **Hardness** (grains/gal)	≤ 5.0	10.97	11.25	–0.28	–2.5%	Lower (Still Above Target)
Na **Sodium** (ppm)	≤ 35 ppm	92.87	84.50	+8.37	+9.9%	Higher (Still Above Target)
HCO_3 **Bicarbonate** (ppm)	< 120 ppm	276.57	289.63	–13.06	–4.5%	Lower (Still Above Target)
Cl **Chloride** (ppm)	≤ 60 ppm	34.74	31.62	+3.12	+9.9%	Higher (Within Target)

SUMMARY INSIGHTS

- **pH** — Slightly lower than historical average but remains above the 6.5 target.
- **Hardness** — Slightly lower than historical average but remains above the 5.0 grains/gal target.
- **Sodium** — Increased compared to historical average and well above the 35 ppm target.
- **Bicarbonate** — Slightly lower than historical average but remains well above the 120 ppm target.
- **Chloride** — Slightly higher than historical average but remains within the 60 ppm target.

IRRIGATION WATER QUALITY BENCHMARKS

pH 6.5 | GH ≤ 5.0 grains/gal | Na ≤ 35 ppm | HCO_3 < 120 ppm | Cl ≤ 60 ppm

All results are averages of irrigation water samples for each respective period.

- I went back through all the water data I had for the club and selected any time we had sampled previously in June or July. Comparing it to the most recent sample, your water is status quo.

- The pH and HCO3 levels are the limiting factors in this water source. Treatment of the water using acidification can reduce both. Just making it a water that can penetrate better.

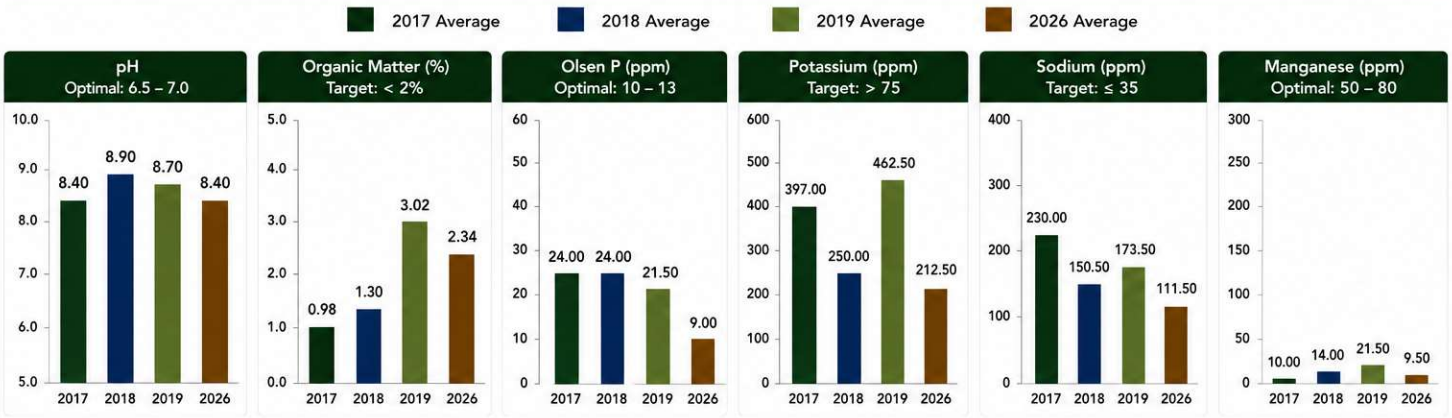
TEES

COYOTE SPRINGS
GOLF CLUB

TEE SOIL ANALYSIS SUMMARY

Average Results by Year

Visit Date: June 18, 2026



Year / Sample	pH (Optimal: 6.5 – 7.0)	Organic Matter (%) (Target: < 2%)	Olsen P (ppm) (Optimal: 10 – 13)	Potassium (ppm) (Target: > 75)	Sodium (ppm) (Target: ≤ 35)	Manganese (ppm) (Optimal: 50 – 80)
2017 Average	*8.40*	*0.98*	*24.00*	*397.00*	*230.00*	*10.00*
2018 Average	*8.90*	*1.30*	*24.00*	*250.00*	*150.50*	*14.00*
2019 Average	*8.70*	*3.02*	*21.50*	*462.50*	*173.50*	*21.50*
2026 Average	*8.40*	*2.34*	*9.00*	*212.50*	*111.50*	*9.50*

SOIL HEALTH STANDARDS (Benchmarks)

pH	Organic Matter (Tees & Greens)	Organic Matter (Fairways)	Olsen P	Calcium	Magnesium	Potassium	Sodium	K : Na Ratio	Irrigation Water pH	Irrigation Water Bicarbonate
6.5 – 7.0	< 2%	< 5%	10 – 13 ppm	≥ 500 ppm	≥ 100 ppm	≥ 75 ppm	≤ 35 ppm	2 : 1 Ideal	6.5 Ideal	< 120 ppm

Note: Soil test results are from samples collected on the dates shown.
Results represent laboratory analysis of the tee samples.

- For this report, I wanted to show perspective from a historical view.
- The most notable change is the OM % increase over the last 10 years. Anytime you are asked to forgo aerifications, OM and thatch will begin to build up. Once that happens, it does change how water infiltrates the soil and the amount used will increase.
- Currently, the tee soil's have a 2 to 1 ratio between potassium and sodium, and all other nutrients are acceptable. Additional manganese would be helpful on rye grass, but sometimes the expense outweighs the results in the bigger areas like tees and fairways.

FAIRWAYS

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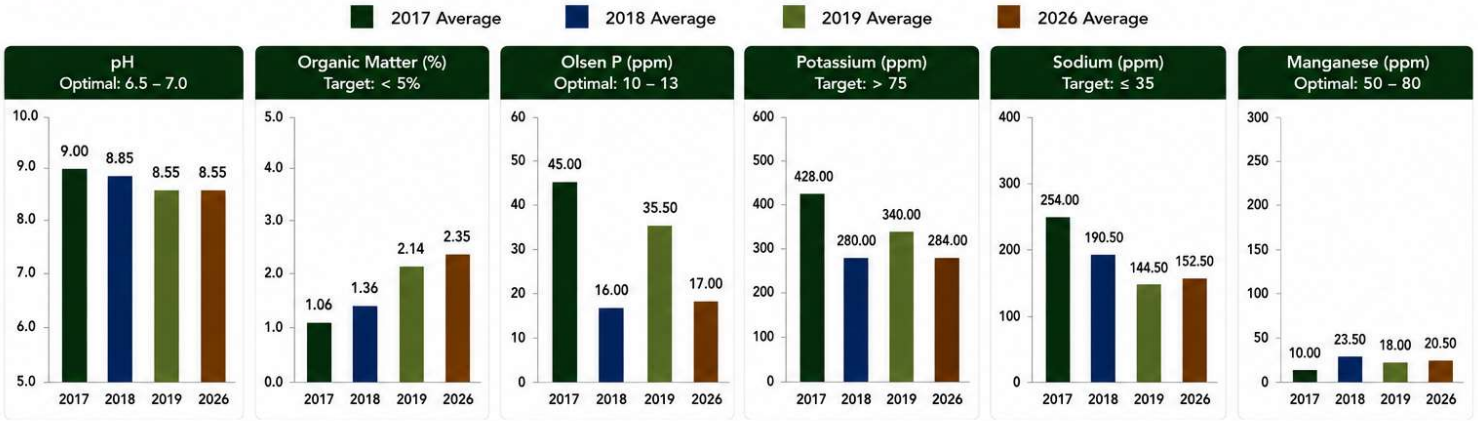
FAIRWAY SOIL ANALYSIS SUMMARY

Average Results by Year

Visit Date: June 18, 2026



Year / Sample	pH (Optimal: 6.5 – 7.0)	Organic Matter (%) (Target: < 5%)	Olsen P (ppm) (Optimal: 10 – 13)	Potassium (ppm) (Target: > 75)	Sodium (ppm) (Target: ≤ 35)	Manganese (ppm) (Optimal: 50 – 80)
2017 Average	*9.00*	*1.06*	*45.00*	*428.00*	*254.00*	*10.00*
2018 Average	*8.85*	*1.36*	*16.00*	*280.00*	*190.50*	*23.50*
2019 Average	*8.55*	*2.14*	*35.50*	*340.00*	*144.50*	*18.00*
2026 Average	*8.55*	*2.35*	*17.00*	*284.00*	*152.50*	*20.50*

SOIL HEALTH STANDARDS (Benchmarks)

pH	Organic Matter (Tees & Greens)	Organic Matter (Fairways)	Olsen P	Calcium	Magnesium	Potassium	Sodium	K : Na Ratio	Irrigation Water pH	Irrigation Water Bicarbonate
6.5 – 7.0	< 2%	< 5%	10 – 13 ppm	≥ 500 ppm	≥ 100 ppm	≥ 75 ppm	≤ 35 ppm	2 : 1 Ideal	6.5 Ideal	< 120 ppm

Note: Soil test results are from samples collected on the dates shown.
Results represent laboratory analysis of the fairway samples.

- Like the tees, the fairways have nearly doubled in OM% over the 10 years. And like the tees, there are no deficiencies that need correcting with regards to nutrition.

- The soils reports may tell a story of deferred maintenance in some cases. As the organic material increases, and what the turf is growing in is more organic material than actual soil, you will see different results. Aerification and verti-cutting are critical in the desert.

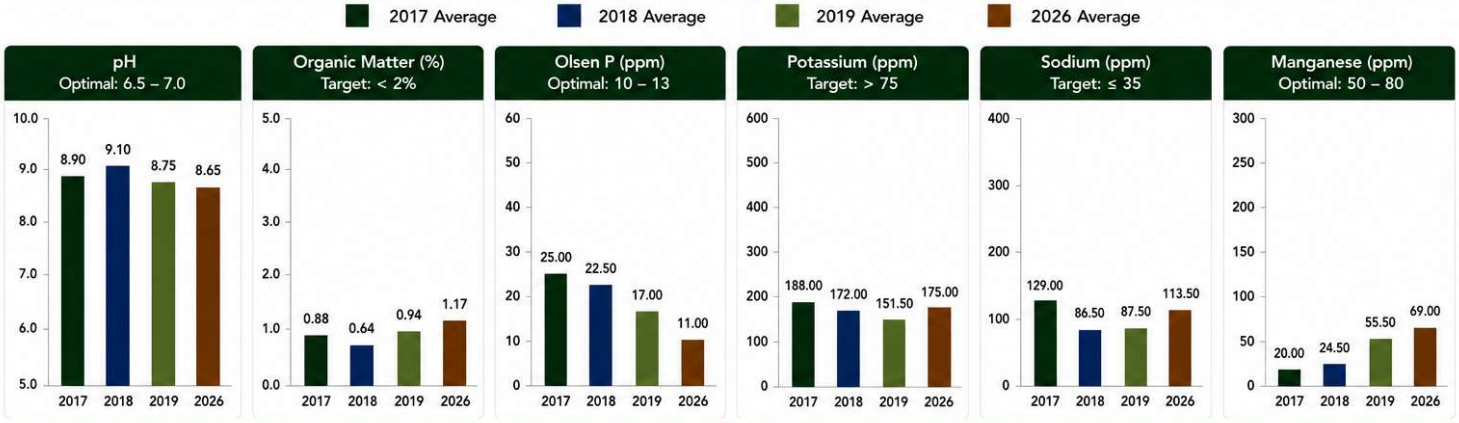
GREENS

COYOTE SPRINGS GOLF CLUB

GREEN SOIL ANALYSIS SUMMARY

Average Results by Year

Visit Date: June 18, 2026



Year / Sample	pH (Optimal: 6.5 – 7.0)	Organic Matter (%) (Target: < 2%)	Olsen P (ppm) (Optimal: 10 – 13)	Potassium (ppm) (Target: > 75)	Sodium (ppm) (Target: ≤ 35)	Manganese (ppm) (Optimal: 50 – 80)
2017 Average	8.90	0.88	25.00	188.00	129.00	20.00
2018 Average	9.10	0.64	22.50	172.00	86.50	24.50
2019 Average	8.75	0.94	17.00	151.50	87.50	55.50
2026 Average	8.65	1.17	11.00	175.00	113.50	69.00

SOIL HEALTH STANDARDS (Benchmarks)

pH	Organic Matter (Tees & Greens)	Organic Matter (Fairways)	Olsen P	Calcium	Magnesium	Potassium	Sodium	K : Na Ratio	Irrigation Water pH	Irrigation Water Bicarbonate
6.5 – 7.0	< 2%	< 5%	10 – 13 ppm	≥ 500 ppm	≥ 100 ppm	≥ 75 ppm	≤ 35 ppm	2 : 1 Ideal	6.5 Ideal	< 120 ppm

Note: Soil test results are from samples collected on the dates shown.
Results represent laboratory analysis of the green samples.

- For this bentgrass,(A1-A4) you've done a very good job of keeping the organic matter in the top 6 inches reasonable. However, what you'll learn on the next page is that most of that organic material is condensed into the top few inches. When that is the case, more aerification, verti-cutting, and top dressing is necessary.

- Nutrient levels are acceptable. One thing to note is that potassium and sodium are creeping towards a 1:1 ratio. Although sodium in your irrigation water is not an issue, it does buildup due to thatch. It may be time to flush the greens to reduce the sodium and then follow behind that with an application of 0-0-50.

PHYSICAL ANALYSIS

COYOTE SPRINGS GOLF CLUB

PHYSICAL ANALYSIS – ORGANIC MATTER

SITE VISIT
June 18, 2026

COYOTE SPRINGS
GOLF CLUB

ORGANIC MATTER ANALYSIS – GREENS

Bentgrass Comparison to USGA Targets

HOLE #4 – GREENS

DEPTH LAYER (cm)	RESULT OM (%)	USGA TARGET (Bentgrass Greens) OM (%)	COMPARISON
0–2 cm	5.41	5.84	Slightly Below Target (-0.43)
2–4 cm	3.19	2.52	Above Target (+0.67)
4–6 cm	1.54	1.72	Slightly Below Target (-0.18)

INTERPRETATION – HOLE #4

- Surface organic matter in the 0–2 cm layer is **5.41%**, slightly below the USGA target of **5.84%**.
- The 2–4 cm layer is above the target at **3.19%** compared to the target of **2.52%**.
- The 4–6 cm layer contains **1.54%** OM, below the target of **1.72%**.
- The profile exhibits a surface-concentrated distribution of organic matter.

HOLE #13 – GREENS

DEPTH LAYER (cm)	RESULT OM (%)	USGA TARGET (Bentgrass Greens) OM (%)	COMPARISON
0–2 cm	4.62	5.84	Below Target (-1.22)
2–4 cm	3.94	2.52	Above Target (+1.42)
4–6 cm	1.99	1.72	Slightly Above Target (+0.27)

INTERPRETATION – HOLE #13

- Surface organic matter in the 0–2 cm layer is **4.62%**, below the USGA target of **5.84%**.
- The 2–4 cm layer is above the target at **3.94%** compared to the target of **2.52%**.
- The 4–6 cm layer contains **1.99%** OM, slightly above the target of **1.72%**.
- The profile exhibits a surface-concentrated distribution of organic matter.

SUMMARY

Organic matter levels in greens on Hole #4 and Hole #13 are below USGA targets in the surface layer and above target in the 2–4 cm layer. The 4–6 cm layer is near target on both greens. Both greens exhibit a surface-concentrated distribution of organic matter.

USGA Target Source: USGA Green Section Records – Organic Matter Guidelines for Bentgrass Greens.

- When reviewing your ISTRC report, they discussed in the first tier, which is 0 to 4" the infiltration rate being poor. The picture of the core sample you sent is all you really need. Once water gets past the top 4 inches, it will easily exit the greens cavity. However, I would estimate a true "flush" on the greens would be with all the sprinkler heads running at one time for about three hours- or more.

- Through my observations, as well as your recent report from ISTRC, we see where there is good consistency from green to green. Meaning, that to tackle this problem properly, he will be able to do the same thing to each Green. There is no doubt that more aerification is needed.

SUMMARY

- Soil temperatures are averaging 75°F, with forecasted air temperatures reaching 105°F, creating favorable growing conditions while increasing daily moisture demand and afternoon stress potential.

- Overall turf performance continues to improve, with better density, color, and consistency than observed during last season. Greens currently exhibit some of the best definition and presentation seen on the property in several years.

- The recent transition to a section-work maintenance strategy is producing measurable results. Course detailing and daily presentation standards have improved significantly, with bunkers, stakes, ropes, and other course accessories maintained at an exceptionally high level.

- Green #4 and Green #13 both exhibit root systems extending to or beyond 6 inches, indicating healthy rooting depth and strong turf function despite challenging summer conditions. Turf quality and overall plant health remain favorable.

- Organic matter profiles from Greens #4 and #13 reveal distinct layering within the upper rootzone. The darker surface accumulation and visible textural interfaces are likely restricting water movement and contributing to localized drainage limitations.

- Several perimeter and low-elevation green areas continue to show symptoms consistent with chronic moisture retention. The original liner system surrounding the greens may be restricting lateral water movement, creating localized perched water conditions that contribute to periodic turf thinning and decline. Shear strength values of 15 in stronger areas and 12 in weaker, low-lying portions support these observations.

- I will review the testing results from ISTRC Lab forwarded by Kris and incorporate those findings into the final recommendations. We will discuss the laboratory data and any resulting management considerations after the report review is complete.

Corey Angelo | Owner

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