

FALL 2017
Data Collection Report
Soil & Water Consulting



Coyote Springs Golf Club



SOIL and WATER CONSULTING

Course Name: Coyote Springs Golf Club

Date of Visit: September 19, 2017

	<u>9/22/16</u>	<u>3/25/17</u>	<u>6/28/17</u>	<u>9/19/17</u>
Humidity/Air Temperature	33%/85°	54%/83°	9%/105°	25%/85°
Greens Temperature	72°	58°	73°	62°
Fairway Temperature	72°	58°	75°	64°

	Acceptable Range For Water Sample	Hole #6 9/22/16	Hole #1 3/25/17	Hole #4 6/28/17	Hole #8 9/19/17
EC	<2.25 mmhos/cm	0.77	0.81	0.79	0.75
Sodium		81.08	86.14	82.81	84.04
Calcium	20 - 60 ppm	47.39	50.97	43.43	49.19
Magnesium	10 - 25 ppm	21.23	22.44	21.22	20.39
Potassium	5 - 20 ppm	13.63	18.46	11.87	12.15
Sulfur	30 - 90 ppm	100.80	110.94	102.81	105.54
Bicarbonate	<120 ppm	236.13	285.09	258.46	271.53
Boron	<0.67 ppm	0.33	0.36	0.35	0.31
Chloride	<177 ppm	36.59	29.45	31.15	25.70



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TEE	Acceptable Range For Alkaline Soils Sample	6 9/22/16	1 3/25/17	4 6/28/17	8 9/19/17
Organic Matter (Humus)	2 - 3%	1.04	1.02	0.98	0.76
Sulfur	12 - 16 ppm	22.00	28.00	87.00	26.00
Olsen - Phosphorus	13 - 20 ppm	16.00	15.00	24.00	13.00
Calcium - TEC of 6 - 12	1,000 lbs/acre	4,230.00	4,488.00	4,746.00	4,746.00
Magnesium	>7% base saturation or at least 200 lbs/acre	16.67%/614	15.96%/588	14.59%/590	15.12%/606
Potassium - TEC of 0 - 35	100 ppm	434.00	286.00	397.00	447.00
Copper	>0.8 ppm	0.49	0.24	0.71	0.71
Manganese	>1 ppm	1.00	<1	1.00	<1
Zinc	>1 - 2 ppm	0.98	0.53	1.45	0.48

FAIRWAY	Acceptable Range For Alkaline Soils Sample	6 9/22/16	1 3/25/17	4 6/28/17	8 9/19/17
Organic Matter (Humus)	2 - 3%	1.32	0.93	1.06	0.57
Sulfur	12 - 16 ppm	49.00	29.00	65.00	38.00
Olsen - Phosphorus	13 - 20 ppm	59.00	25.00	45.00	22.00
Calcium - TEC of 6 - 12	1,000 lbs/acre	3,964.00	4,152.00	4,768.00	4,514.00
Magnesium	>7% base saturation or at least 200 lbs/acre	17.28%/628	17.71%/624	16.98%/714	15.64%/624
Potassium - TEC of 0 - 35	100 ppm	471.00	329.00	428.00	498.00
Copper	>0.8 ppm	0.32	<0.2	0.26	0.65
Manganese	>1 ppm	<1	<1	1.00	<1
Zinc	>1 - 2 ppm	0.75	0.53	0.81	<0.4

GREEN	Acceptable Range For Alkaline Soils Sample	6 9/22/16	1 3/25/17	4 6/28/17	8 9/19/17
Organic Matter (Humus)	2 - 3%	0.72	0.59	0.88	0.68
Sulfur	12 - 16 ppm	21.00	22.00	44.00	22.00
Olsen - Phosphorus	13 - 20 ppm	22.00	10.00	25.00	12.00
Calcium - TEC of 6 - 12	1,000 lbs/acre	3,664.00	3,044.00	3,416.00	3,552.00
Magnesium	>7% base saturation or at least 200 lbs/acre	12.27%/340	12.58%/294	12.81%/348	13.375/376
Potassium - TEC of 0 - 35	150 ppm	141.00	131.00	188.00	223.00
Copper	>0.8 ppm	0.91	0.90	0.83	1.05
Manganese	4 ppm or more	1.00	2.00	3.00	<1
Zinc	>1 - 2 ppm	2.19	2.68	3.03	2.24



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TEE	Acceptable Range For Saturated Paste Sample	4,13 (avg) 6/28/17	8,17 (avg) 9/19/17
Nitrate - Ryegrass	5 - 10 ppm	<2.1	12.60
Phosphorus	2 - 10 ppm	2.90	3.08
Potassium	40 - 100 ppm	41.42	49.77
Calcium	60 - 200 ppm	46.88	48.51
Magnesium	20 - 70 ppm	20.87	24.36
Sodium	0 - 30 ppm	172.43	131.86
Soluble Salts	<1,920 ppm	715.00	719.00
Bicarbonate	<60 ppm	192.79	344.10
Chloride	<1,000 ppm	82.00	62.50
SAR	<4%	5.16	3.86

FAIRWAY	Acceptable Range For Saturated Paste Sample	4,13 (avg) 6/28/17	8,17 (avg) 9/19/17
Nitrate - Ryegrass	5 - 10 ppm	<0.5	17.80
Phosphorus	2 - 10 ppm	3.42	3.50
Potassium	40 - 100 ppm	41.93	50.38
Calcium	60 - 200 ppm	47.69	43.79
Magnesium	20 - 70 ppm	22.73	20.77
Sodium	0 - 30 ppm	192.21	146.22
Soluble Salts	<1,920 ppm	695.50	686.00
Bicarbonate	<60 ppm	217.20	322.14
Chloride	<1,000 ppm	75.50	55.00
SAR	<4%	5.76	4.61

GREEN	Acceptable Range For Saturated Paste Sample	4,13 (avg) 6/28/17	8,17 (avg) 9/19/17
Nitrate - Bentgrass	1-3 ppm	1.15	19.80
Phosphorus	2 - 7 ppm	2.97	4.60
Potassium	25-40 ppm	29.00	41.33
Calcium	50- 75 ppm	33.78	39.16
Magnesium	15-30 ppm	14.28	17.08
Sodium	0 - 30 ppm	111.05	69.25
Soluble Salts	<1,000 ppm	488.00	570.00
Bicarbonate	<60 ppm	141.54	261.13
Chloride	<200 ppm	55.50	49.00
SAR	<4%	4.02	2.33



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TEE	Acceptable Range For Tissue Sample	8,17 (avg) 9/19/17
Nitrogen	3.34%-5.10%	4.50
Phosphorus	0.35% - 0.55%	0.64
Potassium	2.0% - 3.42%	2.49
Calcium	0.25%-0.5%	0.64
Magnesium	0.16%-0.32%	0.36
Sodium	229-1107 ppm	1,795.00

FAIRWAY	Acceptable Range For Tissue Sample	8,17 (avg) 9/19/17
Nitrogen	3.34%-5.10%	4.46
Phosphorus	0.35% - 0.55%	0.48
Potassium	2.0% - 3.42%	2.62
Calcium	0.25%-0.5%	0.55
Magnesium	0.16%-0.32%	0.32
Sodium	229-1107 ppm	2,020.00

GREEN	Acceptable Range For Tissue Sample	8,17 (avg) 9/19/17
Nitrogen	3.0%-6.5%	4.24
Phosphorus	0.2%-0.55%	0.65
Potassium	0.86%-2.55%	2.37
Calcium	0.21%-0.50%	0.55
Magnesium	0.09%-0.22%	0.27
Sodium	506- 2264 ppm	1,575.00



RECOMMENDATIONS



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Thoughts on the course visit

As you will see on the fertility recommendations section, I found no deficiencies in the soil or plant testing this visit. (Manganese is slightly low and should be worked at all year around) Your sodium levels are in good relationship to the "good salts" such as Calcium and Magnesium. The one area that is consistently high and does have a negative impact on the soil, especially in high traffic areas, is the bicarbonate level. You had mentioned that you have requested sulfur burners for 2018. That will mostly solve this issue if it is approved.

Until then, I would recommend spraying acidifying agents like "Impact 7" more often. On the greens, I think once per week is good or at a minimum once every two weeks. On the tees and fairways do it as often as the weather and staff allows. It will take the place of applications of fertilizers.

The picture below shows crabgrass on #17 approach. That was an area that seemed to have it most. I did play the back nine holes and saw other areas of crabgrass but it was usually minimally in the collars of the greens- not sure I saw any in the fairways. I believe we are seeing more and more weeds and better conditions for weeds to grow in, around the Las Vegas area. I have recommended a more comprehensive pre and post emergence herbicide program to several clients in your area. As you know, if weeds like goose and crab grass are left to get a foothold, they become very difficult to eradicate. Right now, it seems to be isolated.



Notes from the visit

- Greens mowing height- 0.120".
- Recent greens fertility was a Florantime Spray.
- Small Solid tine aerification on greens.
- Having some issues with quality of cut on machinery.
- Tees were verti-cut the day of my visit. (looked great!)
- I played the back nine holes.
- Some scalping issues on greens during Monsoon season. More verti-cutting and topdressing will help.
- Consider a change of Pre-emergent on greens and fairways.

Fertilizer and Product Recommendations

Tee & Fairways

Greens (Monthly Applications)