Water Analysis Recap of Test Pool #1

Samples taken by Brian Richardson on the dates shown on the table on page 2 and analyzed by Leslie's Pool Supplies

About the Pool

This pool is located in Southwest Austin, Texas. It was built prior to code changes requiring that pool walls be sealed on the outside to prevent the incursion of ground water.

According to Brian, whose pool service company, Clear Care, had been cleaning this pool for several years, this is a "problem pool." Issues include:

1. Design
    a. At the radiused deep end drains and returns are insufficient, which keeps water relatively static. As a result, particles and contaminants tend to accumulate, rendering the water hazy and allowing for excessive buildup on pool walls.
    b. Sandstone spillways and coping tend to attract algae, which roots easily in the porous rock.
    c. Pool walls show evidence of mottling due to the incursion of ground water into unsealed pool walls.
2. Vegetation – an overhanging oak tree drops leaves and other debris. Birds also nest in the tree periodically.
3. Pets – two dogs make regular use of the pool.

To counteract these issues, the involved technicians have historically used excessive amounts of chlorine. This in turn has resulted in the buildup of toxic levels of cyanuric acid. Brian advised that he has warned the owner about this problem on a number of occasions but the owner, likely due to the expense involved, has so far refrained from allowing his pool to be drained.

Readings

Note that the cyanuric level is 250 ppm in our initial reading taken on 12.15.16, the day Pool Tiger was installed. After one week with Pool Tiger this level drops by more than 50% and remains relatively constant from that point forward. It still reads higher than the maximum acceptable level per industry guidelines. However, the pool owner expressed reluctance, likely due to the expense involved, to run his pool pump more than 6-8 hours per day. To put this into perspective, we advise our dealers and customers to run the pool pump around the clock for the first 3 days after Pool Tiger is installed to effectively reduce excessive levels of cyanuric as well as eliminate waterborne contaminants and suspended particles.

Other readings to note

- Due to improvements in the pool's appearance and overall chemistry, the use of chlorine was discontinued after the reading taken on 1.13.17.
- Copper level was high when we first installed the unit but this was completely eliminated by Pool Tiger in one week.
- Phosphate readings were above the acceptable range before and after Pool Tiger. Brian Richardson has posited that this is due to residual phosphates that accumulated in older pool walls and floor. At the time these readings were taken, pool service had been cut back due for the winter season. Feedback received from other dealers indicates their results show diminished levels of phosphates during periods of normal service.

POOL #1 - Moran			Date	12.15.16		+/- from prior week		12.22.16		+/- from prior week	
	Acceptable Range	Unit type	Condition	Result	+/-	%		Condition	Result	+/-	%
Free Available Chlorine	1-4	ppm	High	10				High	10	0	0.00%
Total Available Chlorine	0.2	difference	High	10				High	10	0	0.00%
Calcium Hardness	200-400	ppm	OK	330				OK	300	-30	-9.09%
Cyanuric Acid	30-99	ppm	High	250				High	120	-130	-52.00%
Total Alkalinity	80-120	ppm	OK	80				OK	100	20	25.00%
pH	7.2-7.8		OK	7.5				OK	7.8	0.3	4.00%
Copper	0	ppm	High	6				OK	0	-6	-100.00%
Iron	0	ppm	OK	0				OK	0	0	0.00%
Total Dissolved Solids	<2500	ppm	OK	1300				OK	1500	200	15.38%
Phosphates	<100	ppb	High	300				High	300	0	0.00%
Nitrates		ppm		30					10	-20	-66.67%

POOL #1 - Moran			Date	12.31.16		+/- from prior week		1.13.17		+/- from prior week	
	Acceptable Range	Unit type	Condition	Result	+/-	%		Condition	Result	+/-	
Free Available Chlorine	1-4	ppm	High	10	0	0.00%		High	5	-5	-50.00%
Total Available Chlorine	0.2	difference	High	10	0	0.00%		High	5	-5	-50.00%
Calcium Hardness	200-400	ppm	OK	290	-10	-3.33%		OK	300	10	3.45%
Cyanuric Acid	30-99	ppm	High	110	-10	-8.33%		High	120	10	9.09%
Total Alkalinity	80-120	ppm	OK	90	-10	-10.00%		OK	100	10	11.11%
pH	7.2-7.8		OK	7.6	-0.2	-2.56%		OK	7.8	0.2	2.63%
Copper	0	ppm	OK	0	0	0.00%		OK	0	0	#DIV/0!
Iron	0	ppm	OK	0	0	0.00%		OK	0	0	#DIV/0!
Total Dissolved Solids	<2500	ppm	OK	1400	-100	-6.67%		OK	1200	-200	-14.29%
Phosphates	<100	ppb	High	400	100	33.33%		High	500	100	25.00%
Nitrates		ppm		30	20	200.00%			10	-20	-66.67%
								Cut out chlorine entirely.			

POOL #1 - Moran			Date	1.23.17		+/- from prior week		2.3.17		+/- from prior week	
	Acceptable Range	Unit type	Condition	Result	+/-			Condition	Result	+/-	
Free Available Chlorine	1-4	ppm	Low	0	-5	-100.00%		Low	0	0	#DIV/0!
Total Available Chlorine	0.2	difference	Low	0	-5	-100.00%		Low	0	0	#DIV/0!
Calcium Hardness	200-400	ppm	OK	280	-20	-6.67%		OK	280	0	0.00%
Cyanuric Acid	30-99	ppm	High	110	-10	-8.33%		High	150	40	36.36%
Total Alkalinity	80-120	ppm	Low	70	-30	-30.00%		OK	80	10	14.29%
pH	7.2-7.8		OK	7.6	-0.2	-2.56%		OK	7.8	0.2	2.63%
Copper	0	ppm	OK	0	0	#DIV/0!		OK	0	0	#DIV/0!
Iron	0	ppm	OK	0	0	#DIV/0!		OK	0	0	#DIV/0!
Total Dissolved Solids	<2500	ppm	OK	1300	100	8.33%		OK	1300	0	0.00%
Phosphates	<100	ppb	High	500	0	0.00%		High	500	0	0.00%
Nitrates		ppm		10	0	0.00%				-10	-100.00%