

# Course Consulting Service ON-SITE VISIT REPORT



## Old Chatham Golf Club Durham, North Carolina

Visit Date: September 1, 2016

Present: Mr. Brian Powell, CGCS  
Dr. George Leight, Green Chairman  
Mr. Matt Jones, First Assistant Superintendent  
Mr. Wesley Deans, Second Assistant  
Mr. Patrick O'Brien, Southeast Region Agronomist, USGA Green Section

### United States Golf Association

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*USGA Green Section Mission: The USGA Green Section develops and disseminates sustainable management practices that produce better playing conditions for better golf.*

It was a pleasure to again return to the Old Chatham Golf Club. The main purpose of this USGA Course Consulting Visit was to assist with both immediate and long term agronomic issues.

It has been a very wet summer season so far this year. A total of 42 inches of rain has occurred already this year by early August, and since that time it has been fairly dry over the past 30 days. All the lakes on the golf course have been at full pool since early August for the first time ever in the history of the golf course.

The staff has focused on providing detail work this summer as no native grass plantings occurred. Last year over 45,000 native plants were planted and it took time away from the details work. So far the results of the detail work have paid off as the golf course is in perhaps its finest condition ever this summer.

Annual play levels remain steady at 10,000 to 12,000. The utilization of the golf course practice facilities has been way up as use of the practice area has been very popular.

## **2016 CAPITAL PROJECTS COMPLETED**

Several significant golf course improvement projects were completed over the past season since my last visit. The majority of the work was done by Shapemasters and Mr. Jeffrey Stein of Wilmington, NC.

Bunkers – New Better Billy Bunkers™ were installed at all greenside bunkers. The Better Billy Bunker method uses a permeable hard surface layer between the drainage on the bunker floor and bunker sand that reduces erosion and



*New greenside bunker renovation project using the Better Billy Construction method was well done. New Tour Angle Bunker sand also was well received by the members.*

improves the life span of the bunkers. This polymer is sprayed over the gravel drainage rock prior to installation of the new bunker sand. The Tour Angle bunker sand from Golf Agronomics was selected by the membership. So far, everyone seems very pleased with the playing conditions, and I would concur. Except for times when Cyanobacteria (surface black algae) appears on the sand surface after rain events, the performance of the bunkers has been spectacular. Use Zeritol® (hydrogen peroxide) will take care of the Cyanobacteria if needed.

Approximately 82,000 square feet of bunkers were renovated at the greenside areas. Next on the project list is to do the fairway bunkers that are now 17 years old. The scope of this project will be significantly larger with over three acres of bunkers targeted for renovation. Overall, the estimated cost of the bunker renovation project when finished will be at approximately \$1 million. It is a major investment but well worth the cost as it will save labor hours when raking, as determined from studies by Mr. Powell on the overall bunker upkeep.

- Sand Capping of Several Approaches – A layer of 6 to 8 inches of sand was installed over the approaches at the No. 1, No. 7, No. 8 and No. 13 holes to firm up these areas and allow hit and run shots to improve the shot variety at these holes, especially for front hole locations. Mr. Powell reports that these approaches are significantly firmer and especially dry up faster after rain events. Also, new fairway drainage was added to a small area at the No. 5 hole to help dry up this area.

No. 7 and No. 12 Hole Redesigns – The Par 3 No. 7 Hole was completely reshaped and sand capped around the putting green, and the bunker design was also modified on the left side, actually shortening the square footage by approximately 2,000 feet. It was a very successful design improvement. The new



*Design changes at the No. 7 hole were a big success. The fescue areas planted also are spectacular.*

native grasses planted at this area are also a great asset. The design work at the Par 3 No. 12 putting green was also well done. The greenside bunker on the right side has now been split into two bunkers.

## PUTTING GREENS

1. Putting Green Quality – The Champion bermudagrass putting green quality was excellent. From my perspective, only a handful of golf courses in the Southeast Region provide this high quality and Mr. Powell is a master of ultradwarf management. Surface management and hand mowing programs underway are working to perfection. Mowing occurs daily and includes double mowing during the growing season to produce green speeds in the range of 12 to 13 feet. Green speed during my visit was at 12 feet 6 inches and the surface smoothness was exceptional. Height of cut at 0.080 inch is aggressive and desirable to produce the high quality. Few courses mow the turf this low, by the way. Turfgroomers or brushing is also done with the hand mowers as needed with every mowing operation. Backtrack verticutting using the skinny blades and weekly sand topdressing with the GA-65 sand is also done weekly to optimize surface management practices. Primo® growth regulator treatments are also done twice weekly at 2.5 ounces per acre to control plant growth and leaf texture, as well as to provide more consistent speeds throughout the day.



*Champion putting greens provide a very high standard of excellence for putting speed and smoothness. Few other courses duplicate this high standard.*

2. Organic Matter Development – Aeration was again done during early July to dilute the organic matter in the upper rootzone. The 0.625 inch tines were again used to optimize sand incorporation into the upper rootzone.

3. Turfgrass Root Systems – I noted root length of 5 to 6 inches with core samples. These rooting depths are the best that I have observed all year on ultradwarf putting greens. No plant health issues exist, especially with roots so healthy.



*Champion root length extended a full 5 to 6 inches from core samples taken at putting greens.*

4. Fertility Programs – All fertility programs underway are working well to optimize plant health and leaf color. Weekly liquid treatments are done at low rates with a complete fertilizer package, along with additional supplemental packages of other nutrients, including potassium and calcium. Granular products are scheduled for later this fall. Be sure to apply adequate micronutrients including zinc, copper, manganese and iron to insure effectiveness of plant fungicide programs too. Using the Anderson Step® product is ideal to make this happen.
5. Nematodes – Root knot and ring nematodes have been detected from assays sent to the University of Florida and Dr. Billy Crow, the best nematologist in the USA. As you know, nematodes are root pests that have been a nuisance for your staff the past few years. Nematicur® was applied this past April due to the assay results by Dr. Crow, and suppression was good until early July when they returned again. It was noted that the Champion was less perky but decline did not occur.

The new Indemnify® product from Bayer, a game changing material for nematode control and the first new nematicide in the past 40 years, was released a few weeks ago. Mr. Powell applied it two weeks ago at the full rate of 0.39 ounces per 1,000 square feet. The nematodes are now dead and this product should provide a residual suppression of 300 to 500 days. Avid® can be used next season should any problems develop, but no one anticipates any issues after using the Indemnify.

Indemnify is also a fungicide with a single mode of activity. Resistance issues can happen, so be careful using fungicides in this family too often. Indemnify is in the same chemical groups called Carboxylic Acid Amides = activity is SDHI (succinate dehydrogenase inhibitors) and include the following:

- Prostar® (flutolanil)
- Emerald® (Boscalid)

- Velista® (penthioopyrad)
- Kabuto® (isofetamid) – this is a new one on the way!
- Xzemplar® (fluxapyroxad)

## **Putting Green Concerns**

1. Off-Types. Small mutations were observed, which most likely occurred during the conversion planting process. These are only visible now to expert agronomists and not a major concern at this time. All the ultradwarf varieties are susceptible to these off-types due to the genetic instability of the parent Tifgreen bermudagrass variety. A few examples of the off-types observed were at the No. 1, No. 4 and No. 6 greens, with the most at No. 12 green.

### **Recommendations:**

- Consider sending a sample of the off-type to the University of Tennessee plant diagnostic laboratory. Mr. Eric Reason, my USGA summer intern this past year, has pioneered a morphological test to determine if these are true off-types. For more information, please visit this website: [Bermudagrass Off-Type Assessment](#). Only a small fee is charged for this service.
2. TifGrand Bermudagrass Collars – The TifGrand 36 inch width collars are very good and the main concern is the contamination from the Tifway on the outer borders that has encroached into these areas (No. 16 collar is an excellent example). The TifGrand is not an aggressive grower and it is easily overpowered by the Tifway due to its more aggressive growth. Nothing is possible to prevent this from happening but is it well worth noting. The TifGrand is now mowed at 0.0300 inch and its dark green leaf color provides for terrific definition and playability. The TifGrand collars are an excellent playing feature on the golf course.



*Tifway bermudagrass from the green surrounds has invaded the TifGrand bermudagrass collars over the past few years.*

### Recommendations:

- Consider setting up a TifGrand nursery and periodically resodding contaminated areas of the TifGrand collars with new TifGrand from the nursery. Mr. Powell would like the size of the nursery at approximately 5,000 square feet and ideally resod about 6 collars annually.

### Putting Green Fall Disease Management Ideas

Here are recommendations for the preventative spring dead spot and Pythium root rot preventative programs that are about to get started soon. Also, I have included tips for controlling any Cyanobacteria that may develop during the cooler seasons.

### Spring Dead Spot:

- For spring dead spot prevention on bermudagrass putting greens, in late September make an application of Velista at 0.7 ounces per 1,000 square feet with 4 gallons of water per 1,000 square feet. Repeat this treatment again in late October. Maximize soil penetration to the thatch and root system through use of a soil wetting agent directly prior to application. Follow these fungicide applications with a very light (no more than 0.10 inches) irrigation directly following application.
- Velista® likely would benefit from either a DMI or strobilurin to pick up the bermudagrass decline too. I would look at the cost of adding Heritage® or Fame® to the Velista application.
- The first usage of the Velista for this program was done last fall with great success.
- Approximately 20 acres of fairway turf was also treated for spring dead spot last fall with the Velista successfully. These areas are mapped out as the most susceptible from past history and Mr. Powell plans to repeat this again.

### Pythium Root Rot

For Pythium root rot prevention, start these treatments in late September or early October at a 14 day interval.

- Apply Chipco Signature® (or similar phosphite) to start off the program. Add a soil penetrant or wetting agent to improve delivery of the spray (either one day prior to the fungicide or with the fungicide). Apply at least 3 gallons, preferably 4 gals/M (DO NOT WATER IN).
- Apply Segway® fungicide.
- Apply Subdue® fungicide.
- Apply Banol® or Stellar® fungicide.
- Use Terrazole® if needed at any time if any symptoms should be observed.
- For fungicide control, Pythium fungicides **watered in performed WORSE** compared to being left on the foliage for Pythium root rot, according to studies done at Clemson University by Dr. Bruce Martin.
- Repeat this program again in the late winter once soil temperatures and the new growth begins to occur.

### Cyanobacteria control

- Control existing cyanobacteria with sequential applications of ZerotoI® or similar hydrogen peroxide product on a seven day interval. Apply three ounces in 1.5 to 2 gallons of water, minimizing the time between when the product is poured in the spray tank and the spray is applied.

## **TEES, FAIRWAYS AND ROUGHS**

Tifway bermudagrass at tees, fairways and roughs was in excellent playing condition. Primo treatments are done to tees and fairways and approaches, and hopefully next summer to the roughs too. Roughs are mowed at 1.25 inch in the spring but gradually elevated to 1.50 inch during the summer due to the aggressive growth.

### Recommendations:

- Consider enacting a very aggressive Primo Maxx® (Podium® generic product) to the roughs next summer to help reduce growth rates, clippings, mowing frequency. Primo will also help to allow the height of cut to remain at 1.25 inch all summer. Golf balls will sit up nicely on this higher density rough at this lower height of cut. Here is how to make this happen:
  - Lower the rough height of cut next spring to 1.25 inches. This is a golfer friendly height of cut for the rough that will make the game more fun and help the pace of play.
  - Apply Primo Maxx (Podium) at the rate of 20 ounces per acre starting in the late spring and at a 25 to 30 day interval. Use 15 to 30 gallons of water per acre to improve the uptake of the Primo by the plant and to reduce sprayer fill-ups. Apply with a flat fan nozzle.
  - This program will allow the bermudagrass to remain at 1.25 inch all summer and provide a golfer friendly rough at a minimum cost.
  - Consider also applying the Primo to fairways at this same higher rate to reduce mowing and clipping issues next summer.
  - Delay iron treatments for five to seven days after Primo applications if possible to enhance the effectiveness.
- Consider acquiring rotary mowers in the future to replace the reel type mowers now used in the rough. Rotary mowers are far easier to maintain without the reel grinding. Productivity will be increased with these machines due to the width span of 150 inches of rotary machines compared to the existing reels machines at 100 inches. A total of six rotary mowers would be needed to start up this program.
- Consider adding a 5 to 6 inch sand cap and installing drainage at the No. 3 fairway this winter. The No. 3 fairway is now the wettest on the property and typically comes out of the winter months with the lowest density due to the poor drainage. Shapemasters can also do this project in a very efficient manner which will produce a significant improvement in the turf quality. Annual investments in

fairway drainage at approximately \$100,000 over the next few years would be a plus to address poor draining areas. The new fairway drainage work at the No. 5 hole was a big success and hopefully the start of this program. For more information on the benefits of drainage projects, please read, [Drainage on Golf Courses](#).



*New fairway drainage project done at the No. 5 hole was a great success.*



*The poorest drainage fairway at this time is at the No. 3 hole. Sand capping and adding new drainage would be a big plus if done in the future.*

- The new Imants root pruner purchased last year was used to sever tree roots along the outer rough at every hole last winter. This is one primary reason for the

uniformity of the rough this summer. It took a total of eight to ten days to get this work done due to the high efficiency of this machine.

### **Forward Tee Proposal**

Forward tees are a big trend in golf now to make it more fun for players with slower swing speeds. Most experts, and based on studies by the USGA and PGA, now recommend a set of forward tees with a yardage of 4,000 to 4,100. Right now the shortest set of forward tees at the Old Chatham Golf Club has a yardage of just over 5,000. This is far too long for players with the slowest swing speeds.

These new forward tees are placed in the fairways so they are mowed and maintained with fairway operations so as not to add any extra costs. Tee markers and course ratings should also be provided so the golfers with slower swing speeds can have a handicap. Red tee markers, if used, should be eliminated as all tees should not have any gender association to optimize results. For more information, please read, [Hitting a Home Run with Forward Tees](#).

### **Turf Colorant Programs**

The USGA Turfgrass Colorant Workshop was again held this past February at the Pinehurst Resort. Mr. Rob Vaughan, superintendent at Brunswick Plantation, Calabash, North Carolina was the keynote speaker and he emphasized that the key to a successful turf colorant program is the sprayer setup. Filling the sprayer up with a turf colorant and applying it requires plenty of knowledge for success, especially since sprayers are not setup to apply turf colorants from the manufacturer. The superintendent has to insure that the sprayer is setup properly and working with the mechanic to make the necessary adjustments happen is essential. Mr. Vaughan emphasized the method of sprayer setup below for a successful turf colorant program. If done properly, it will require only one pass of the sprayer over an area for success. It is called the **One and Done Method** of spraying turf colorant to fairways.

- Make sure the fairways are ready for the turf colorant by either mowing or blowing to eliminate leaves and debris. A clean turf canvas is essential.
- The sprayer must be properly calibrated and the nozzles clean prior to the application.
- The height of the boom off the ground should be at approximately 14 inches to optimize results, or 16 inches to 20 inches for acceptable results. Less wind drift happens the lower the boom is to the ground, which improves results.
- Add more nozzles to the boom. Using a 10 inch nozzle spacing rather than the standard 20 inch nozzle spacing provides better results.
- Use the 8004 or 8006 nozzles without air induction, or the 8008 with air induction nozzles. Experimentation with these nozzles guidelines should provide good results.
- Keeping a consistent speed and pressure will deliver a consistent rate of product to the turf canopy for success. Otherwise, the color may not be as desirable.

## **Native Areas**

No new native grass areas were planted this year to again allow a refocus on the overall golf course detail programs, which successfully produced the best course conditions ever this year. During the 2015 season, over 45,000 native plants were established and some minor mortality did occur at a few areas. The staff would like to focus on these areas of decline and reestablish these areas again by seeding and spiking, for example the area at the No. 16 hole. Also, the staff would like to continue to establish more native grass areas around teeing areas at No. 1, No. 8, and No. 10. All these tees have large bermudagrass areas that could be taken out of play similar to what was done at the No. 9 tee. These native areas are a great asset and provide additional character to the golf design.



*New native area planted during the 2015 season at the No. 16 hole will need renovation this fall with reseeding and spiking to rejuvenate.*

## **CONCLUSION**

It was a pleasure to visit at the Old Chatham Golf Club and discuss the care of the golf course. Besides providing a service free of bias from affiliation with any product or manufacturer, the USGA Green Section is the largest supporter of turfgrass research in the world. This research effort is critical to ensure the future of the game of golf and the industry of turfgrass maintenance. The thrust of this research is to provide superior turfgrasses that play better and are easier to maintain while ensuring golf courses remain positive influences on the environment. Your club's membership in the USGA and support of the Green Section makes this research effort possible.

Thank you for your support of the Course Consulting Service. I will plan to visit again next summer or sooner if needed. Please do not hesitate to call my office should you

have any questions concerning this report, the research efforts of the USGA or any other matter regarding the maintenance of your course.

Sincerely,

A handwritten signature in black ink, appearing to read "Patrick O'Brien", written in a cursive style.

Patrick O'Brien  
USGA Green Section