Making great sport happen

LISBURN GOLF CLUB

Advisory Report on the Golf Course incorporating the STRI Programme

Report Date: 17 August 2018
Consultant: Ian McClements

Lisburn Golf Club

Date of Visit:	Tuesday 7th August 2018
Visit Objective:	To review the condition of the golf course and the effectiveness of the maintenance regime using the STRI Programme.
Present:	Ivor Walker – Greens Convenor Robert Nelson – Course Manager Johnny Burn – Deputy Course Manager Ian McClements – STRI Ltd
Weather:	Dry with scattered clouds, 14-17 ºC

Headlines

- This has proven to have been a particularly challenging season given the prolonged hot, dry summer.
- The irrigation system has proven to have been inadequate to meet the demands of the summer season without significant intervention.
- Greens are currently recovering from the effects of the summer stress, Anthracnose was evident on several putting surfaces.
- Green surrounds and tees were showing the effects of the prolonged dry summer with inconsistencies in grass cover.
- There was better consistency in playing quality between the greens when assessed with the STRI Programme than in previous years.
- Greens were marginally slower and below our normal target range for Lisburn Golf Club. Smoothness values were within target, but greens were not as true as they could be.
- As envisaged less top dressing had been applied to greens due to the dry conditions.
- The 10th fairway had been drained and we understand that plans have been made to drain the 11th to improve winter playability.

Key Actions

- Putting surface management should focus on recovering areas weakened because of the dry summer.
- The direction of mowing and rolling on greens must be altered to improve surface trueness.
- Significant overseeding is envisaged to aid recovery of areas weakened because of the dry summer.
- We understand that the club are currently investigating the availability of water on site with a view to upgrading the irrigation system.
- Full advantage must be taken of the proposed maintenance week at the end of September to prepare the putting surfaces for the winter season.
- Before draining the 11th fairway a levels survey is essential to ascertain the most economical drainage layout and position of the drains

Objective Measurements

Measurement	Average	Target Range
Soil Moisture (%)	26 % (range 25-29%)	15-30%
Hardness (Gravities)	110 Gravities (range 106-115)	85-110 g
Smoothness (mm/m)	19.6 mm/m	<25 mm/m
Trueness (mm/m)	10.4 mm/m	<8 mm/m
Green Speed	8 ft 2 in	9-10 ft
Organic Matter 0-20 mm (%)	8.4%	4-6%
Organic Matter 20-40 mm (%)	6.5%	<4%
Soil pH	5.4	5.0-6.0
Phosphate (P_2O_5)	15 mg/l	>10 (mg/l)
Potassium (K_2O)	99 mg/l	>30 mg/l

Key: In Target | Marginal Variance | Out of Target

Hole	Green Speed	Smoothness	Trueness	Firmness Mean	Firmness SEM (+ or -)	VWC	VWC SEM (+ or -)
4	8 ft 2 in	19.78	10.08	108	2.9	24.6	0.6
6	8 ft 2 in	19.49	10.44	115	2.8	28.9	1.4
9	8 ft 2 in	19.45	10.53	106	1.8	24.9	2.0

Photo Observations and Comments

Figure 1: Triplex ring evident on several greens

Figure 2: Recovering anthracnose scaring

Figure 3: Weaker putting green edge

Figure 4: Weak 3rd green surround

Figure 5: Weak 7th approach

Figure 6: Typical weaker area following dry summer

Figure 7: Hydrophobic organic matter at surface in weaker sections

Figure 8: Typical of teeing surface weakened because of summer drought

Figure 9: Fescue turf associated with bunker face is more tolerant of drought

Figure 10: Bunker edge damaged due to mechanical wear

Figure 11: Drainage lines on the 10th fairway to be topped up

Figure 12: Typical fairway profile

Recommendations

Greens

- Greens were truer along the main axis of play, it is believed that this can be attributed to most mechanical operations being completed in this direction. The direction of mowing and rolling must be varied to eliminate any potential ridging caused by the machinery that would compromise surface trueness.

- Given the break in the weather, top dressing frequency can be stepped up again to achieve the desired dilution of surface organic matter for the remainder of the growing season.

- Green surfaces were a little sealed and unreceptive due to the combination of mowing/rolling over the summer months. Surface aeration with a small solid tine would help to improve their receptiveness to both water and gaseous exchange. This also helps to integrate top dressings with any surface organic matter.

- All greens would benefit from being oversown to encourage recovery and infilling of disease scars with desirable species. Use a 100% bentgrass mix and ensure that the seed is brought in to contact with the surface, using a set of Dyna Seeders or similar. A useful mechanism for introducing seed in to small areas is to use the Accuform AccuSeed from Paraide.

- The nutritional programme should be based around the principle of maintaining slow steady growth. Liquids give the best control over growth when turf density and surface uniformity have been achieved in the spring. Granular products are acceptable when a surge of growth is required but this surge in growth will have a negative impact upon green speed.

- The end of summer season renovation should be based around scarification to remove surface organic matter and deep aeration to open the green profiles to depth ahead of wetter winter weather.

- The perimeter of the putting green remains weak where mechanical stress is responsible for thinning in the south eastern corner. Inadequate irrigation coverage has also caused the turf to thin in the north western corner where golfers tend to access the green. To reduce the mechanical stress, it would be preferable to cut this green by hand and to lift the height of cut a fraction. More regular monitoring of the irrigation requirements and intervention by hand is required, given the limitations of the current automatic system.

Green Collars Surrounds and Approaches

- A build up/accumulation of organic matter on some approaches is allowing water to lodge at the interface between the putting surface and surround e.g. at the 7th. Re-adjustment of surface contouring is required to allow surface water to run freely from the green out and away that will help improve turf health and winter playability.

- Sections dominated by weaker shallow rooted grass species have suffered the most in the dry summer, there are few green complexes that have not experienced some loss of grass, with the 3rd being the poorest. Soils need to be fractured, loosened and opened to encourage water movement and recovery. This might be difficult to achieve until the ground is soft enough to take a mechanical tine. Use wetting agents to encourage water movement and minimise run off. Many areas have an accumulation of organic

matter at the surface and this should be removed with a powered scarifier or similar before seeding. Pot seeding with a blunted 8-10 mm solid tine will be the most effective mechanism for forming a seedbed as it is unlikely that a dimple seeder will achieve the desired surface penetration to ensure that seed is placed in contact with the soil below the organic matter. Adequate moisture will also be critical to ensuring good seed germination and establishment.

- Use a seed mixture comprising approximately 60% *Lolium perenne* (ryegrass) and 40% *Festuca* (slender creeping red and chewing's fescues). The fescue content will be more tolerant of drier conditions once established.

Tees

- Tee surfaces that have lost grass will have to be recovered in the broken weather that is favourable for seed germination and establishment. Where drought tolerant species (bentgrasses and fescues) are most prevalent e.g. 12th turf losses have been much lower.

- The absence of an irrigation system has highlighted the poor recovery of divots on Par 3 holes e.g. 14th. There is a strong argument for including irrigation to tees considering climate change predictions for more frequent hotter drier summers and the use of drought tolerant species. In either case where divots are taken the seed requires regular applications of water for germination and establishment.

- All tees will benefit from a renovation programme to aid recovery, this should be based around surface organic matter removal (scarification), solid tine spiking and seeding. Ensure that seed rates are adequate for the requirements of each surface, at least 30 g/m^2 and up to 40-50 g/m^2 on bare areas. In favourable weather conditions repeat the seeding if necessary two to three weeks after the first treatment when the rate of establishment can be assessed.

Irrigation

- The dry season has highlighted the current inadequacies of the current system and it is encouraging to note that the club intend sourcing water on site with a view to upgrading the system. At Lisburn we would suggest that the new system should have the capacity to irrigate the putting surfaces, collars/aprons and tees as a minimum.

Fairways

- Fairways were purported to have been cut at 16 mm whilst the height of grass when assessed on the 10th with a prism was closer to 14 mm.

- We appreciate the importance of having a body of grass to allow the ball to sit up on a tight lie. If the ball were to sit down in to the sward there would be more chance of grass coming between the ball and club face which would reduce the potential to impact spin on the ball. The body of grass is currently lacking, and density needs to be improved.

- There is a small amount of organic matter at the sward base and this should be removed with an end of season scarification which will form a precursor to the proposed sanding and deep aeration work.

- Sanding should continue to build up a sandier surface that will help to sustain the programme of improving winter playability.

- Following the scarification and sanding apply a small input of nutrient e.g. a granular fertiliser of analysis 9:7:7 or similar at 250 kg/ha to aid recovery ahead of the winter season. Reassess growth in the spring and apply a further granular fertiliser to aid recovery after the winter. Liquid fertiliser inputs through the growing season will also be important in help the process of improving the body of grass. As a guide plan to apply a liquid fertiliser comprising 10 kg N/ha with seaweed extract every four weeks.

- The 11th fairway is very flat, and an accurate levels survey will be necessary to determine the most appropriate and cost-effective mechanism for drainage installation.

- Drains on the 10th fairway should be topped up level with the surrounding ground.

- The club should also consider the purchase of a gravel bander which would allow for the installation of secondary drainage to complement the recent contractor installed drainage and to maintain the effectiveness of these pipe systems. The recently installed gravel bands have a shorter life expectancy than gravel/sand slits and will have to be re-installed in a few years once they become capped and sealed off with organic matter and fine textured soil brought to the surface through work casting activity.

Signed

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Senior Consultant
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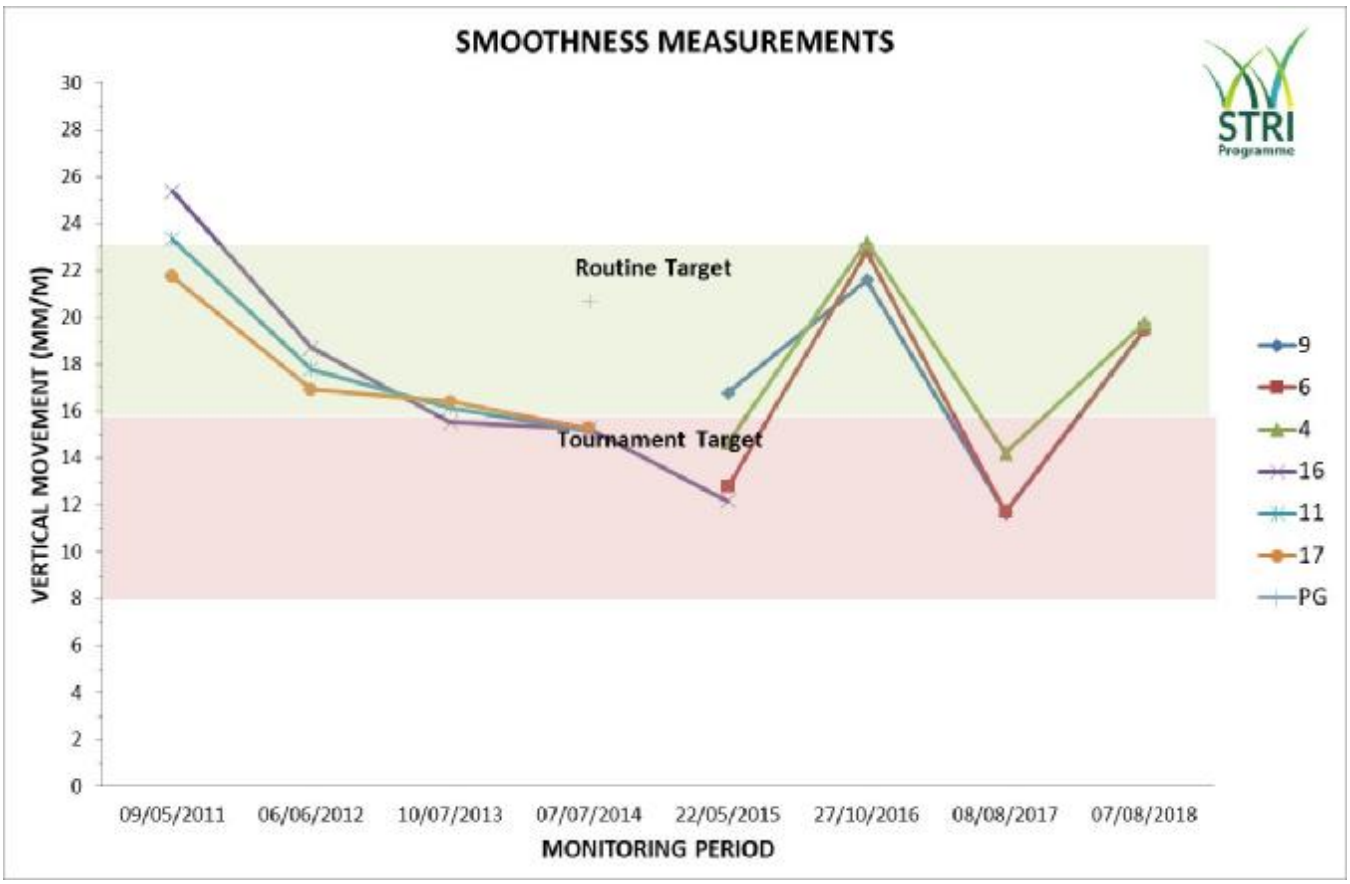
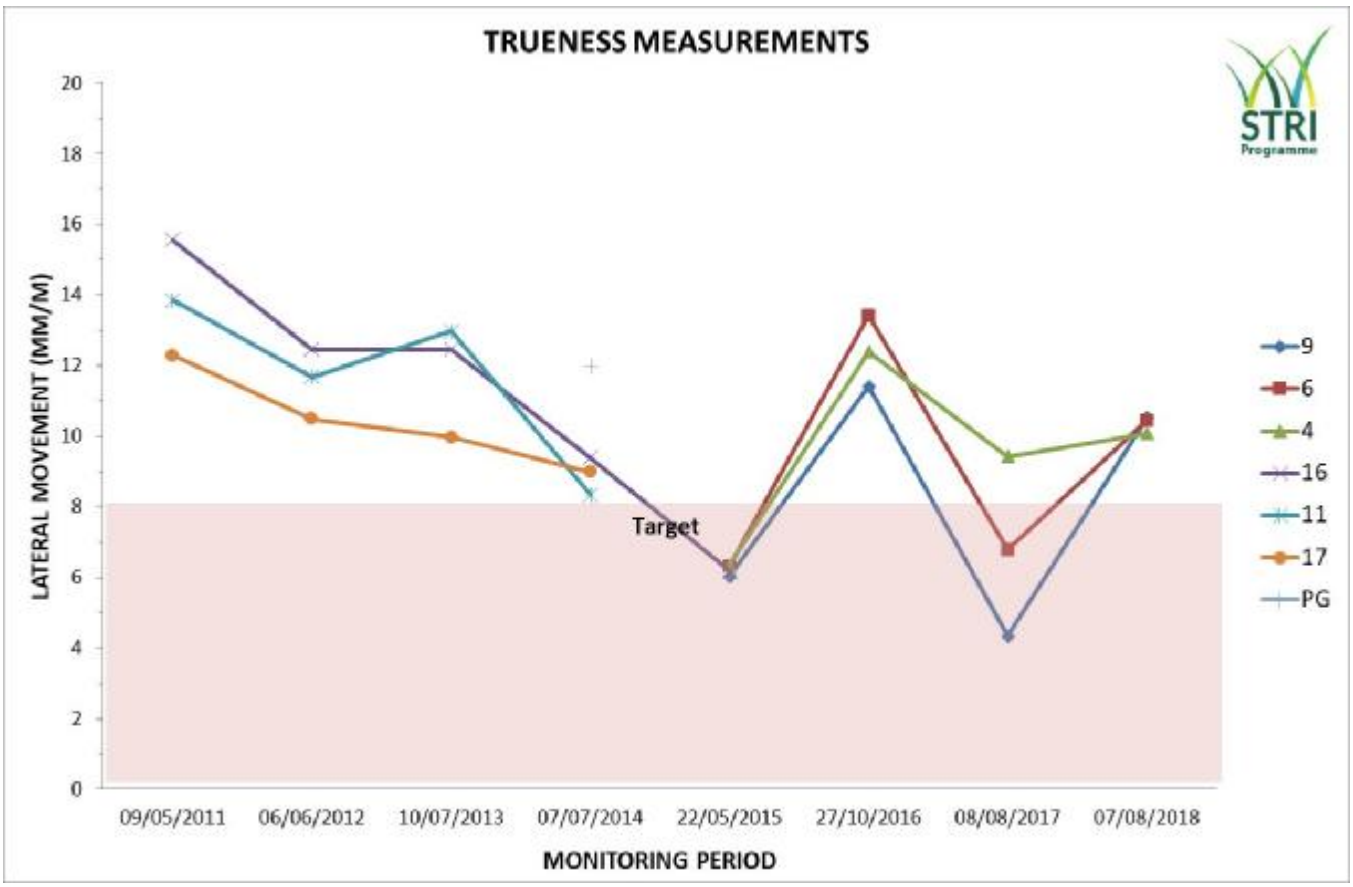
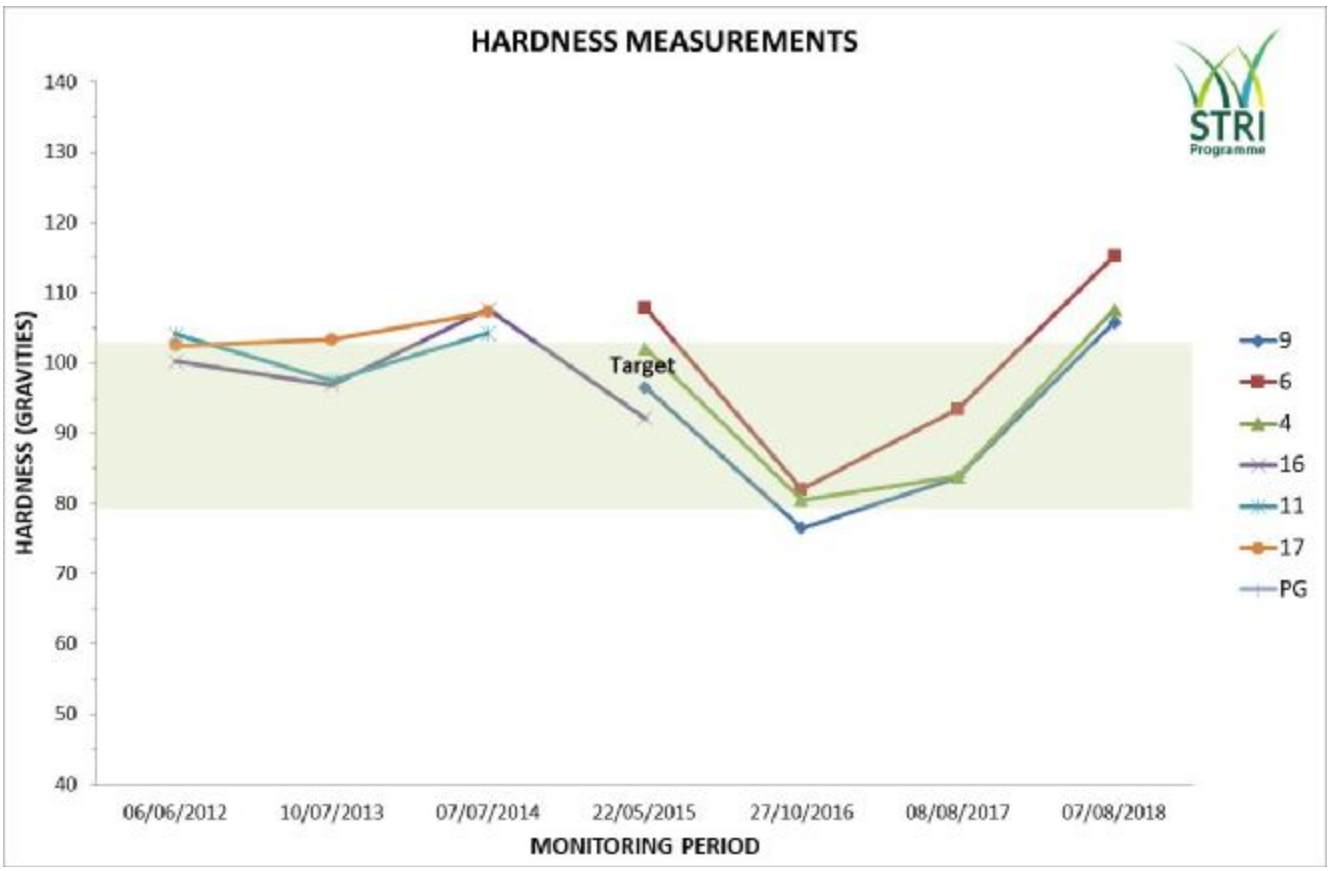
Objective Data



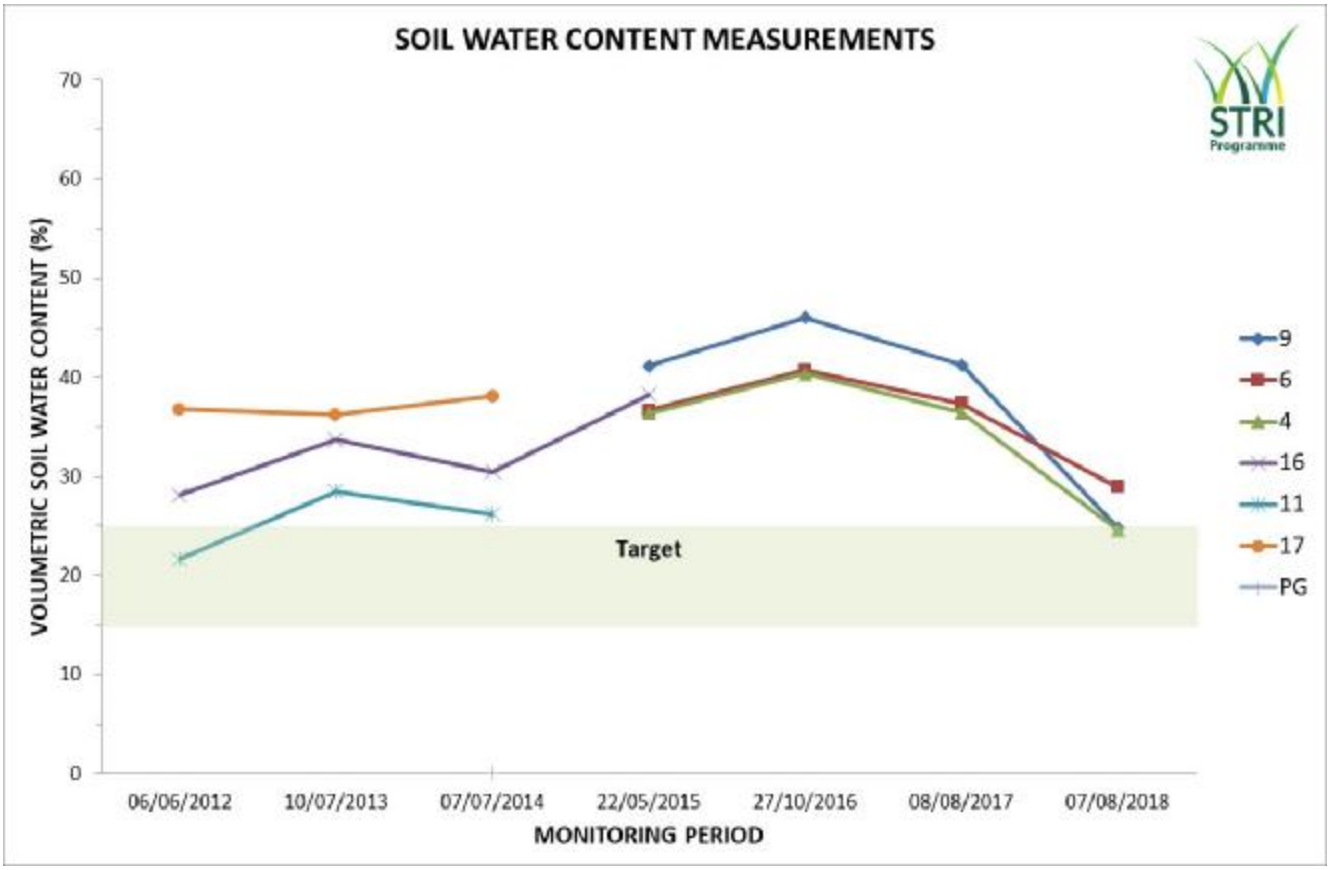
Objective Data Graph 1: Green smoothness



Objective Data Graph 2: Green Trueness

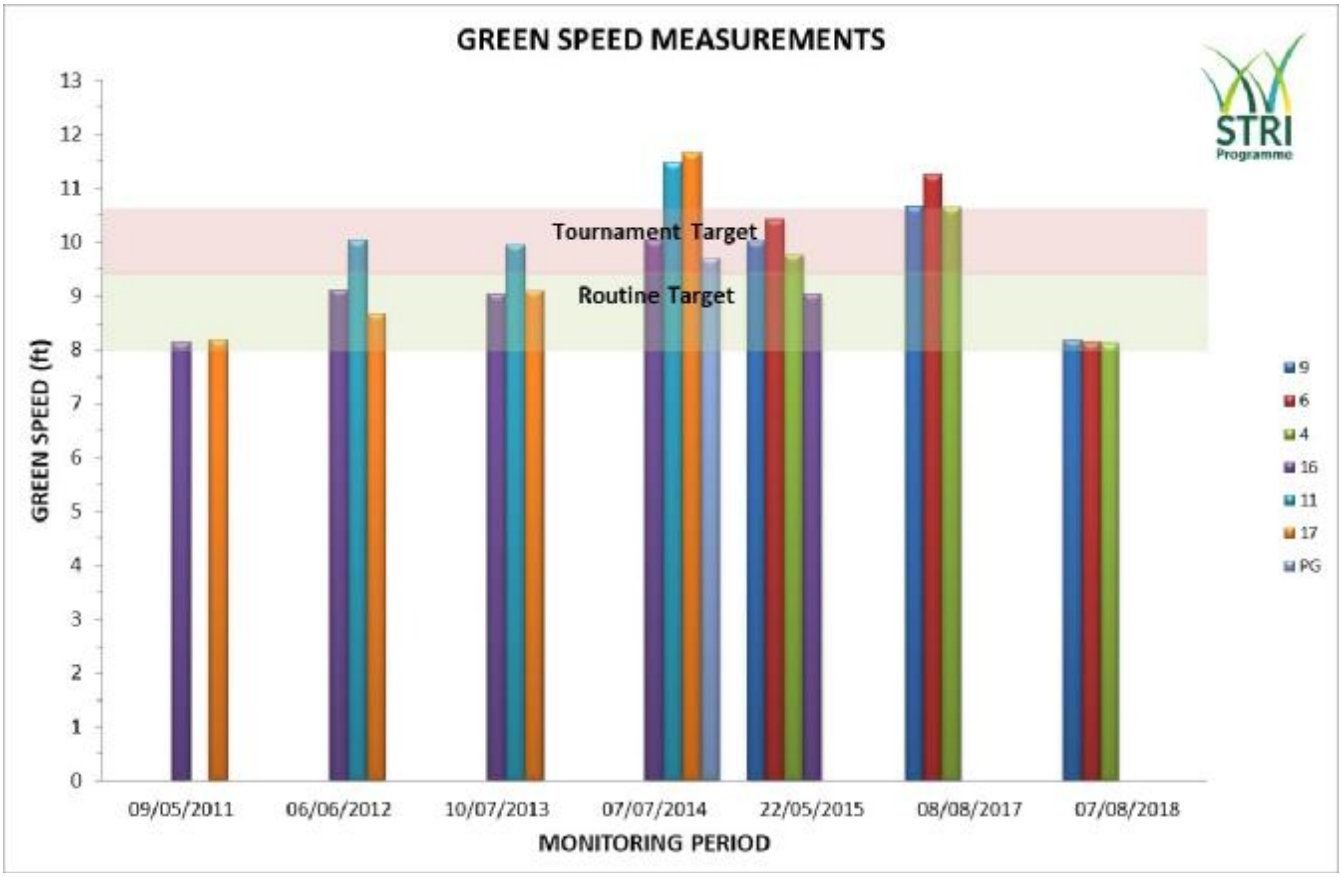


Objective Data Graph 3: Green firmness



Objective Data Graph 4: Green moisture content

Objective Data (continued)



Objective Data Graph 5: Green speed

STRI

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SOIL CHEMICAL ANALYSIS

CLIENT:

LISBURN GC

RESULTS TO: **IM**

DATE RECEIVED:
10/08/2018

Lab No.	Source	pH	P_2O_5 (mg/l)	K_2O (mg/l)
A17118/1	GREEN 4	5.3	15	128
A17118/2	GREEN 6	5.6	19	125
A17118/3	GREEN 9	5.4	11	145

Mr M A Baines, Soil Laboratory Manager

THE RESULTS PERTAIN ONLY TO THE SAMPLE(S) SUBMITTED AND TESTED.

STRI

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ORGANIC MATTER CONTENT

CLIENT: LISBURN GC

ADDRESS: 68 EGLANTINE ROAD,
LISBURN, CO ANTRIM,
BT27 5RQ, NORTHERN IRELAND.

DATE RECEIVED: 10/08/18

DATE REPORTED: 17/08/18

RESULTS TO: IM

TEST RESULTS AUTHORISED BY:
Michael Baines, Laboratory Manager

CONDITION OF SAMPLE UPON ARRIVAL: MOIST

SAMPLE NO	DESCRIPTION		LOSS ON IGNITION (%)*
A17118/1	4	0-20 mm	7.78
		20-40 mm	6.57
		40-60 mm	3.60
		60-80 mm	2.78
A17118/2	6	0-20 mm	7.81
		20-40 mm	5.08
		40-60 mm	3.39
		60-80 mm	2.98
A17118/3	9	0-20 mm	9.59
		20-40 mm	7.77
		40-60 mm	4.24
		60-80 mm	2.88

* ASTM F1647-11 Standard Test Methods for Organic Matter Content of Athletic Field Rootzone Mixes (Method A)

ACCREDITED
Testing Certificate 2159 - 01

THE RESULTS PERTAIN ONLY TO THE SAMPLE(S) SUBMITTED AND TESTED