

Bude & North Cornwall Golf Club

Report on the golf course incorporating
programme performance testing

Report date: 9th November 2022

Consultant: Steve Gingell

| | |
|------------------|---|
| Date of visit: | 9 th November 2022 |
| Visit objective: | To undertake an inspection of the golf course during the winter period and provide recommendations and strategies for the forthcoming year. |
| Weather: | The weather prior to the visit had been very wet and this had however preceded a very long dry summer period. |

Introduction

Our previous visit was May 2022

The document details the following:

- [Executive summary](#)
- [Essential actions](#)
- [Performance data summary table](#)
- [Record of site conditions](#)
- [Recommendations](#)
- [Graphs of performance data and soil results](#)

Executive summary

- This was my third visit to the Golf Club undertaking an advisory visit and the first with Jamie. It was very pleasing to walk the course with Jamie and discuss the potential and possibilities for the forthcoming year.
- The weather during the summer has meant that many areas had died back and whilst good recovery had occurred, a number of historic thin soils or dry patches has yet to recover well.
- As a consequence and probably as seen over a number of years, the level of Chafer beetle larvae and subsequent bird damage was quite high and reflected in the weakness of areas becoming attractive to birds exploring for grubs. Possible recommendations for their repair and future management have been discussed.
- Whilst there was no significant evidence of a crane fly flight at present, the high level of winds may have blown them off the course but it is therefore still recommended that the Acelepryn is considered for use as pupal casts on the greens have been noted.
- Greens continue to have a compromised profile and not typical of a links soil, mainly due to the richer layer at the middle section of the profile. There was evidence of start of a good build-up of sand dressings and some dilution of the layer seen in the upper organic matter levels falling. The organic matter at lower levels continue to be very high.
- Whilst the greens were uniformly wet, the 2nd green and the 8th green were particularly high. Both these greens were holding water partly due to their construction and subbase profile.
- The strategy for greens for the future is to manage and dilute the rich layer within the profile and actively remove the organic matter.
- The tees in general were in fair condition as were most of fairway areas, albeit some weak areas where thin soils were present or have been bird pecked. It was very evident however that the drought left many areas badly worn with significant walkway areas around the course.

Essential actions

- With the Acelepryn application period coming to a close it is recommended that the greens are treated as evidence of crane fly adults have been noted. This should be undertaken prior to the 18th November.
- The areas where chafer beetle larvae were present could be trialled treated with some of the parasitic nematodes with the note that the weather conditions are not perfect for their retention/active period. The areas of damage should be worked upon with clean turf or seeded and covered if seeded with a germinating sheet to reduce surround pecking.
- We discussed the fertiliser programme potential for the year and agreed that whilst a low level of nitrogen would be appropriate needs to be carefully managed through the year to maximise fescue health. In this light it is fully supported for the 6:2:4 Sustain application to occur possibly down tine holes of a solid tine renovation.
- Over the longer term the organic matter needs to be continued to be worked on using hollow cores, solid tines, top dressing actively, finding a system that allows the operations to be undertaken within the competition schedule. It is also important that the rich layer is removed, diluted and worked upon to minimise water holding and create a much more traditional and effective fescue growing soil profile.
- Over the whole course repairs needs to be made to the worn areas and improvements to turf health through a range of different actions and activities. This could also help to reduce the amount of pest attack/bird pecking due to better healthier grasses.

Performance data summary table

Greens set up: cut at 4.5mm

| Measurement | Average | Target range |
|--|-------------------|--------------|
| Soil moisture (%) | 32-42% (range) | 15-30% |
| Hardness (gravities) | 91g (range 90-93) | 85-120 g |
| Organic matter 0-20mm (%) | 5.6 % | 3-6% |
| Organic matter 20-40mm (%) | 6.2 % | <4% |
| Soil pH | 5.9 | 5.0-6.0 |
| Phosphate (P ₂ O ₅) | 17 mg/l | >10 mg/l |
| Potassium (K ₂ O) | 48 mg/l | >30 mg/l |

Key:

In target

Marginal variance

Out of target

Key points from the performance data:

- **Moisture and Firmness:** The moisture levels were high and hence the firmness slightly softer than previous test results. This was not unexpected following the very heavy rainfall. However it continues to show the need to reduce organic matter and make the profile more like in nature to allow adequate moisture penetration. The 8th green continues to be the wettest although the firmness's were very similar. The softness in the surface was leading to higher levels of pitch marks.
- **Organic matter and soil chemistry:** It was pleasing to see the upper 20mm organic matter levels starting to fall and being close to target. However, the lower sample points are high and similar to the last sample. This shows the need to work upon the richer layer. These layers are impeding moisture flow. The soil pH has fallen slightly and was within an ideal range. Both soil phosphate and potash were on target and would not impact soil health.

Record of site conditions



Photo 1: Around the course many of the weak areas and tops of mounds were pecked and Chafer larvae were found in moderate numbers.



Photo 2: The greens supported a moderate level of fescue and patches of bentgrasses, ryegrass and Yorkshire fog. There was evidence of dry patch residual rings.



Photo 3: The 1st green was moderately dry but water continues to be held above the richer layer. Rooting was good.



Photo 4: The centre of the 2nd green had recovered mainly to meadow grass and bentgrass and was wet. There was a high thatch level in the central dip. There were clays at depth.



Photo 5: The weather and high usage has left areas weak and potentially slippery as seen on the 2nd tee bank.



Photo 6: The 17th green had some take-all patches on the perimeter. This was not over aggressive and in most cases fescues were replacing the bentgrasses lost to the disease.



Photo 7: The 8th green continues to be a different green to the remainder of the course due to its make-up. There was a lower fescue content on the surface.



Photo 8: The 8th was wetter than the other greens tested and had higher thatch and a more defined rich layer.

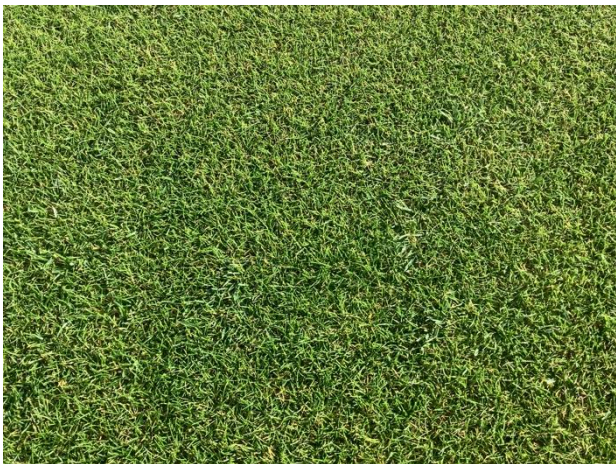


Photo 9: The 11th green had a high fescue content with the previously large Yorkshire fog patches diminishing.



Photo 10: The 11th was drier than most but water was still held over the rich layer in the thatch. Overall green health was good although the fescues were starting to thin out.

Recommendations

Greens

- As with previous reports the greens continue to be troubled by a rich soil layer within the profile. This was historically from the use of products such as Fendress. Whilst Fendress itself is not a key issue, but a shallow layer can create a textural break through which water will not penetrate and then result in the development of organic matter above and wetter surface than the links profile would be characteristic of. The Fendress is also relatively nutritional rich and in the links environment tends to favour bentgrass development. It is pleasing that the current dressings are more links like but the historic layer remains.
- The key aim therefore over the next five years is to continue to dilute, remove and build away from this layer. This would be through a number of different options from larger sized hollow tines, albeit still much smaller than the jumbo tine that has perhaps prehistorically been considered. This coupled with solid tining and dressings, micro hollow tining, possibly the use of drill and fill or one of the other more modern technologies will gradually dilute and remove this problem layer.
- The key benefits of the above actions are the greens will become drier, less prone to saturation during wetter conditions and be more supportive of fescues for which is abundant on many greens but needs to be kept and managed well.
- The fescue surfaces were a little weak possibly showing some continued activity of fairy rings. It is argued that the fescue would need to be fed in the near future and it is pleasing to hear the 6:2:4 Sustain fertiliser is due to be applied in the near future.
- Over a year the typical level of fertility for the greens would be between 40 and 60 kg/ha of nitrogen applied. This does need to be spread over the year to ensure the fescues are very healthy going into the winter period and are brought out of winter successfully. The use of the Sustain is supported with a caveat it has quite a large granule and is often quite difficult to work into the profile. Sometimes due to the beneficial level of organic sources within it means that the release of much of the nitrogen can be quite delayed and may not respond to the expectation seen with slightly faster releasing elements. In addition to the fertiliser plan the ongoing supplements of seaweed, plant health products and wetting agents need to continue apace. Most greens are known to have historic fairy ring activity, which would include the 1st. This can and has led to dry patch areas giving uneven sward species mixtures. It may be beneficial for a treatment of slightly more curative type wetting agents such as Aquaduct from Aquatrols in addition to the normal applications. .
- The greens currently support a high level of fescue with some coarser grasses which are part of mix of a links green. Those areas of Yorkshire fog which appear to have reduced in the dry summer to the benefit of the other grasses would benefit from ongoing “scuffing” prior to cutting. There were quite a few longer grass blades particularly of ryegrasses and some coarser bentgrasses that will benefit from grooming/verticutting depending on the level of severity needed to undertake the job. This could be undertaken whilst growth is still active. It will still be fully supported for a dressing application to be applied.
- We continued to discuss the merits of the pedestrian Toro Procore as this can give a very clean and fast operation, particularly in the summer months when surfaces need to be in excellent condition. Tractor mounted equipment is useful but may cause too much surface damage at key times.
- One way forward to enhance the ability to undertake operations required with minimal disturbance will be to consider a programme of coring or tining, dressing and possibly

overseeding three greens per week on a rotating basis. The poorer greens, the 2nd to the 8th will benefit from an additional application.

- The 2nd green has been resurfaced following the loss of grass cover in the dipped centre and was particularly wet. In the past this would have developed meadow-grasses and to the detriment of the fescues and therefore were very prone to being removed with herbicide. The dip ideally would benefit from being tined and then dressed out. A trial to create drain sumps would be supported. It was noted however there is clay at the base and this system may not be fully beneficial and may require a more conventional or one of the newer drainage type technologies.
- There was some take all patch noted on the 17th green on the edges. This disease is not uncommon in established turf and often relates to water flow and relatively alkaline circumstances. To some extent the uses of manganese and seaweed supplements can help to reduce this disease and only the use of Heritage as Azoxystrobin in the absolute necessity where it is significantly damaging.
- The greens were noted to have a number of leatherjacket casts where the adults have emerged each morning and this would indicate quite a population with the greens. However with the very low levels of adults on the wing it could suggest that in very windy conditions have meant they haven't been able to lodge on the golf course and this could benefit in future years from lower levels of larvae. As Acelepryn is in stock and the date of use up is very close it will be sensible to consider an application to the greens to treat any new larvae that manage to hatch out.

Chafers

- Around the course there was potentially a high population of chafers. What it means is that a chafer could be seen every 4-6" (100-150 mm). This may increase in some of the weaker areas. However the crows have tended to peck at the weaker more yellow areas of turf to explore for potential food sources. If any are found then they are further turned over until no more food is found. The treatments using Acelepryn is not effective at this stage of the year as the adults are too large and it may be appropriate to apply next summer if the product is reapproved under emergency the approval scheme. It should be noted that the whole course would not be able to be sprayed partly due to costs and partly due to the restrictions of around 10% of the course area overall.
- There may be some merit in undertaking a small scale trial using the parasitic nematodes specifically for chafer beetles and this whilst not an ideal time for the current temperatures may have some benefit. This is only to be used on a very small trial.
- The repair of the damage is important and needs to be thorough. There are three routes. Firstly, preparing a seed bed and seeding using a fescue and super dwarf ryegrass mixes. Hard fescue would also be of benefit. The seed bed should be protected by a grow mat such as that was used in cricket end repairs. The second route would be to prepare the area for imported turf that is of better colour of health and strength and then inserted into the area. This could also be utilised in some of the worn areas but would need to match the local area. The third route forward is using plant health and conditioning of the weaker areas. Therefore a programme of health improvement which includes wetting agent, seaweed, molasses, Fulvic and humic acids and potentially some compost mixes should be targeted to any weak areas within the playing surfaces. This should extend to much of the fairway areas.

Wear Areas

- The summer and high levels of play have left many areas quite worn. It should be noted that quite few areas are related to machinery routes which should be carefully redesigned and

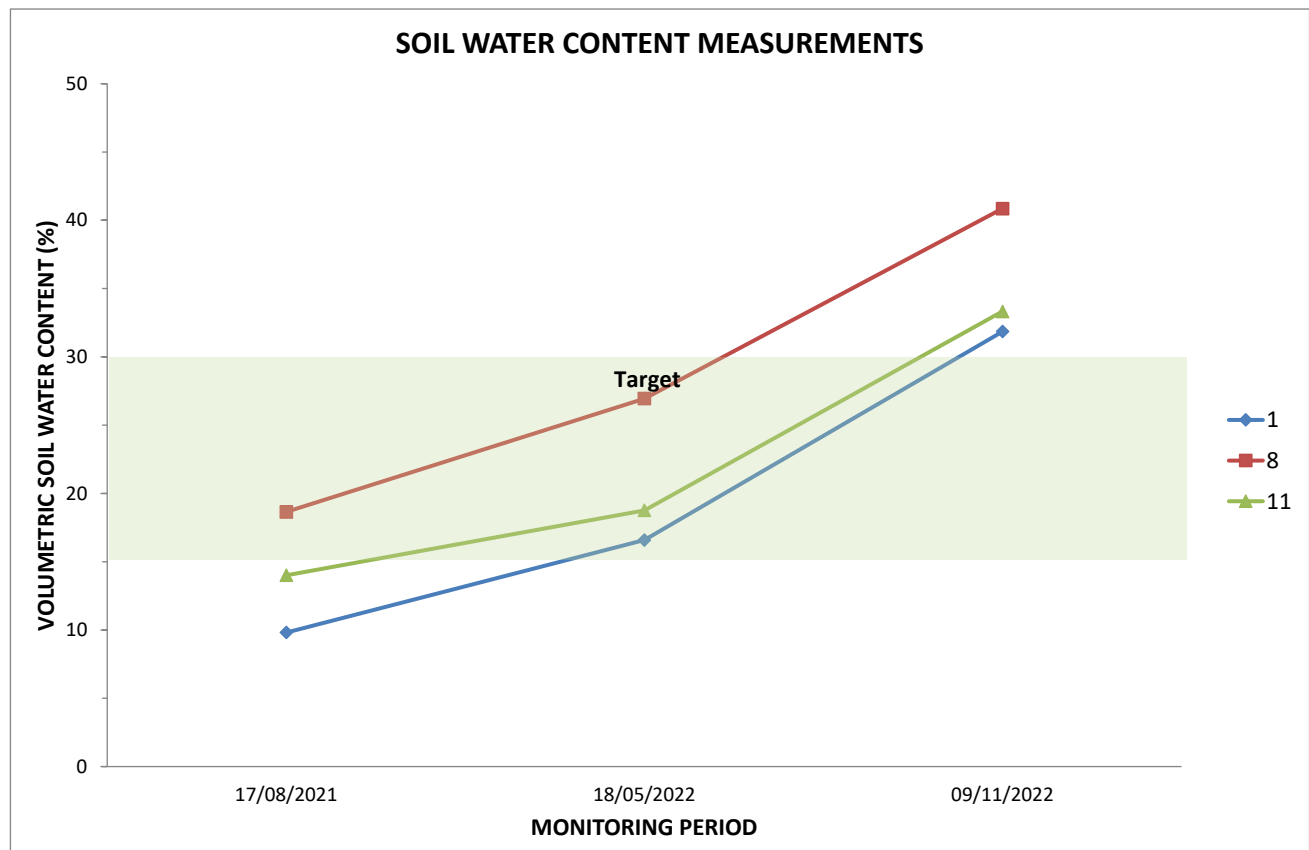
planned over the winter period. All areas of wear should be reviewed and brought back into condition with higher level of maintenance being applied.

- It is important as the winter approaches that worn areas and slopes don't become slippery and safe routes around the course are planned. The use of rope and pins can move golfers to less worn ground to protect the key areas for the next summer's season. Any areas that are worn needs to be improved to again in a similar manner as the weak areas on fairways with higher levels of aeration and use of appropriate top dressings/returfing according to need.

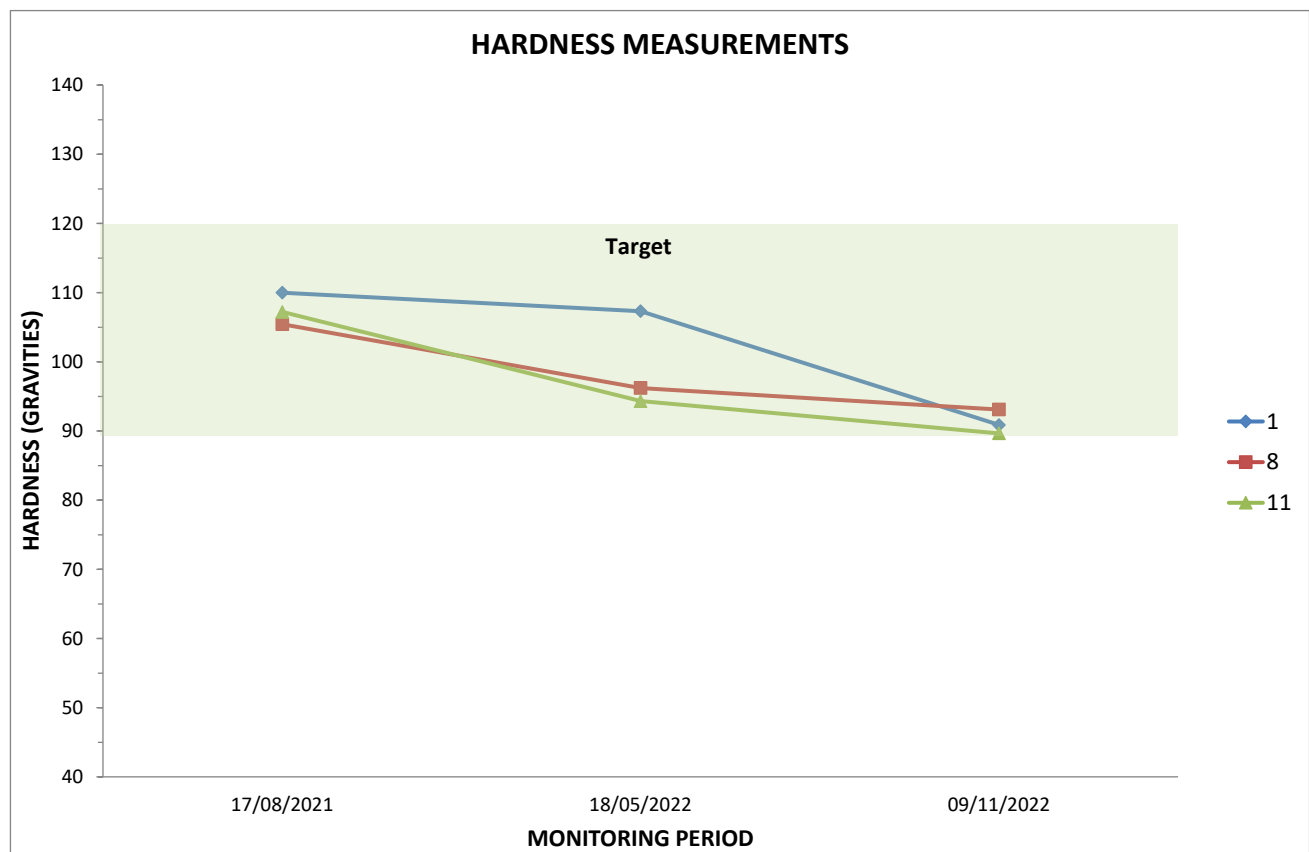
New Tee and Dune

- The new areas of dune created last year has yet to fully establish due to the mobile nature of the sand smothering the grasses. It would be sensible to continue to sow grass especially as the weather is better suing creeping strong and hard fescue. Over time the grass will colonise and with the marram stabilise the bank. There may be merit in considering the hessian "netting" over the seeded areas to help reduce movement. Hydroseeding may also work as the mix contains bank "stabilisers".
- The new tee needs to be levelled cleaned of stone and a suitable rootzone brought and seeded or preferable turfed.

Graphs of performance data and soil results

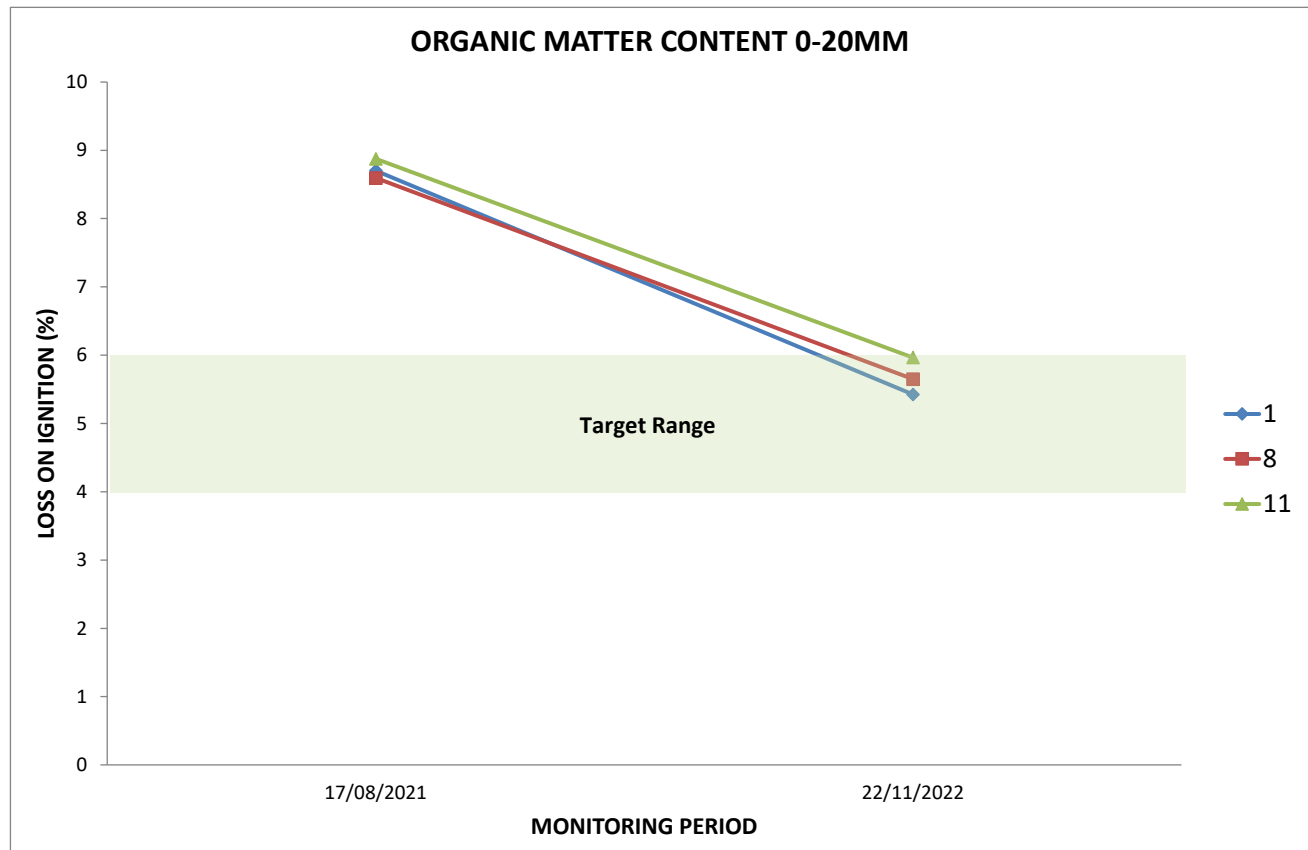


Graph 1

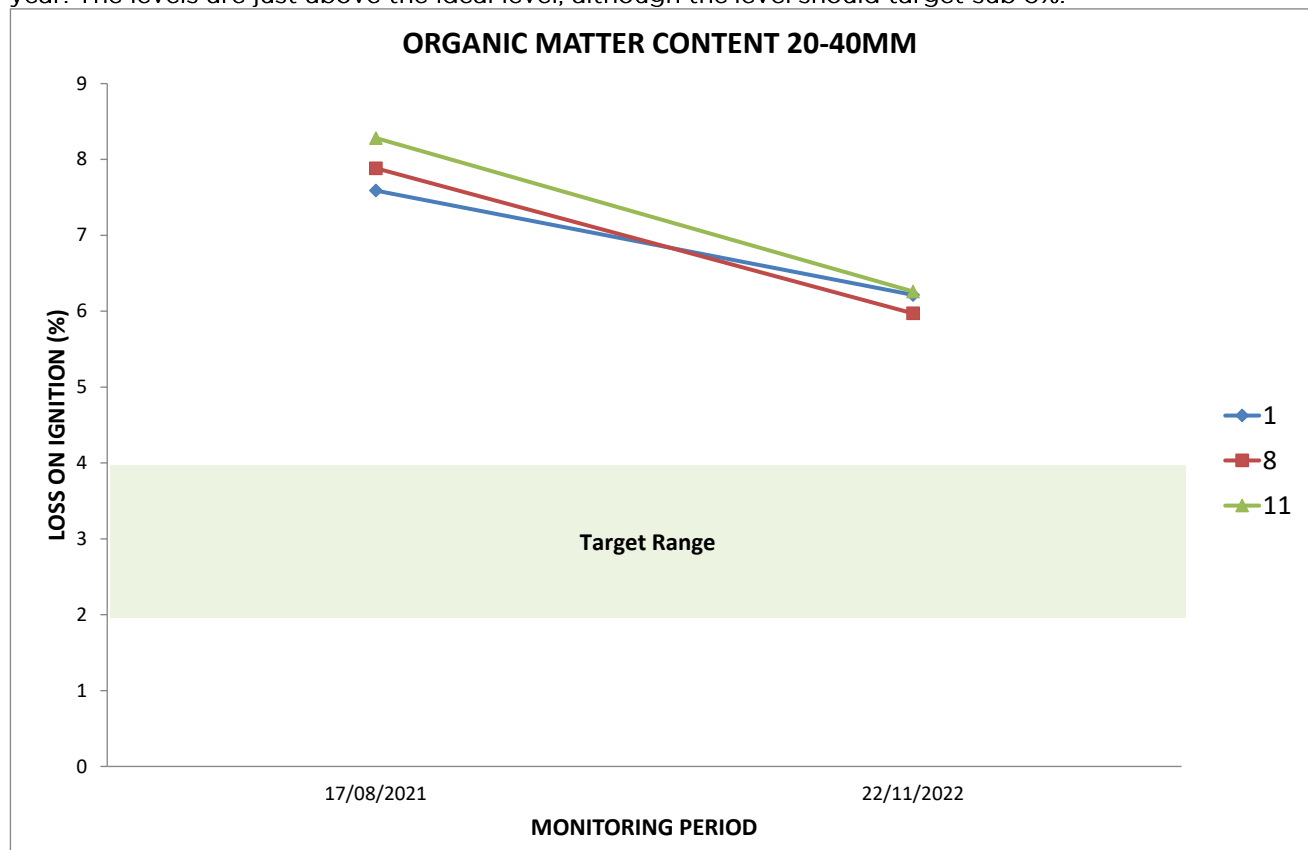


Graph 2

Soil test results

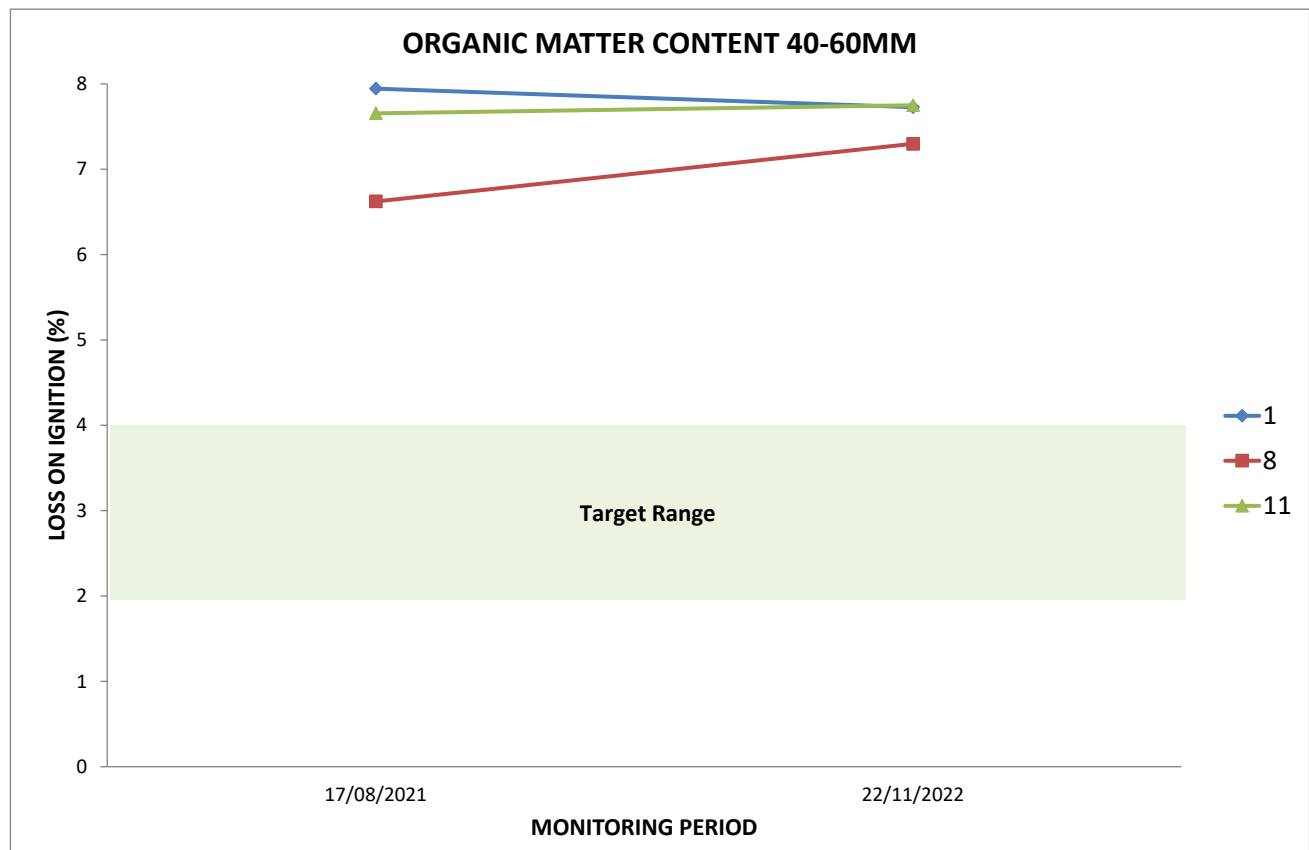


Graph 3: the upper 20mm has shown a significant reduction with aeration and top dressing over the last year. The levels are just above the ideal level, although the level should target sub 5%.

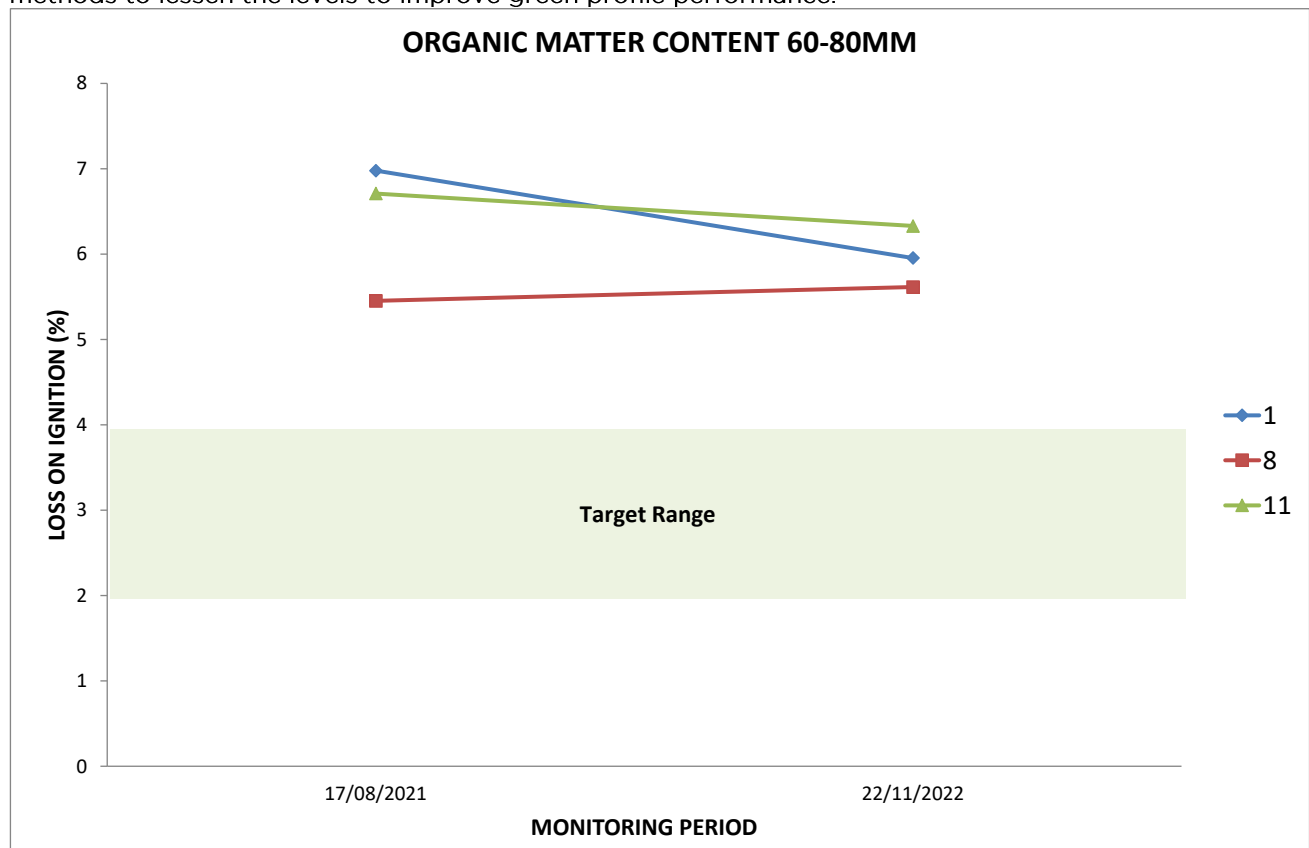


Graph 4 The 20-40mm levels have also reduced positively but are still much higher than ideal. The targets especially for the lower levels are 2-4% as this will better reflect the links profile. It is a compromise of turf health versus the moisture content, drainage and performance.

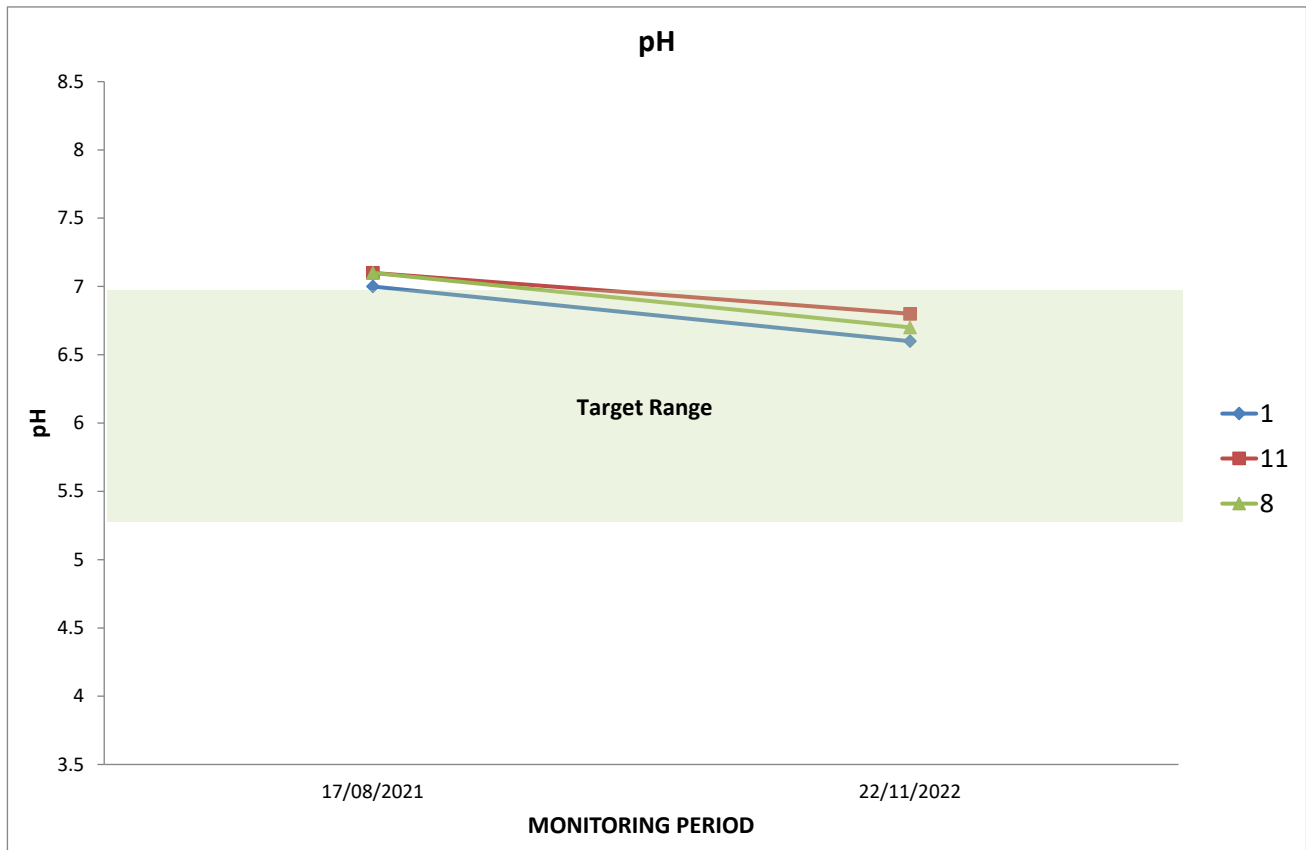
Soil Tests (continued)



Graph 5 The richer soils at depth are very organic rich and similar to the last test. The report details methods to lessen the levels to improve green profile performance.



Graph 6 The above comments hold true for the 60-80mm levels as these fall within the richer soils.



Graph 7 Soil pH was on target and within the ideal target range.

Signed



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SOIL CHEMICAL ANALYSIS

CLIENT:

BUDE & NORTH CORNWALL GC

RESULTS TO: **SJG**

DATE RECEIVED:

23/08/2021

| Lab No. | Source | pH | P ₂ O ₅ (mg/l) | K ₂ O (mg/l) |
|----------|----------|-----|--------------------------------------|-------------------------|
| A19258/1 | GREEN 1 | 7.0 | 37 | 89 |
| A19258/2 | GREEN 8 | 7.1 | 39 | 87 |
| A19258/3 | GREEN 11 | 7.1 | 42 | 76 |
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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: BUDE & NORTH CORNWALL GC DATE RECEIVED: 23/08/21
ADDRESS: BURN VIEW, DATE REPORTED: 26/08/21
BUDE, RESULTS TO: SJG
CORNWALL, EX23 8DA

TEST RESULTS AUTHORISED BY:
Michael Baines, Laboratory Manager

CONDITION OF SAMPLE UPON ARRIVAL: MOIST

| SAMPLE NO | DESCRIPTION | | LOSS ON IGNITION (%) [*] |
|-----------|-------------|----------|-----------------------------------|
| A19258/1 | 1 | 0-20 mm | 8.70 |
| | | 20-40 mm | 7.59 |
| | | 40-60 mm | 7.94 |
| | | 60-80 mm | 6.98 |
| A19258/2 | 8 | 0-20 mm | 8.59 |
| | | 20-40 mm | 7.88 |
| | | 40-60 mm | 6.62 |
| | | 60-80 mm | 5.45 |
| A19258/3 | 11 | 0-20 mm | 8.88 |
| | | 20-40 mm | 8.28 |
| | | 40-60 mm | 7.65 |
| | | 60-80 mm | 6.71 |

^{*} ASTM F1647-11 (2015) Standard Test Methods for Organic Matter Content of Athletic Field Rootzone Mixes (Method A)



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

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