ARTEMIS TREE SERVICES

Site
36A Murray Road
Northwood
HA6 2YL

Prepared for
Tree Me

Prepared by
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FdSc Arb, DipHE Arb L5

30th October 2025

Decay Detection DD-36455

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1. Brief

1.1 Artemis Tree Services ltd has been instructed by Adam Grimshaw to undertake decay detection investigation of one Oak tree (T1) using a Resistograph PD400 microdrill and provide recommended management actions based on our findings.

1.2 The investigation has been promoted by the discovery of fungal fruiting bodies at the base of the trunk, noted during works to removal a fallen limb earlier in the year.

2. Report limitations

2.1 Climbing inspections have not been carried out as part of the investigation.

2.2 Conclusions and recommendations relate to the condition of the site and tree at the time of the inspection only. Comments valid for a period of 1-year from the date of this report.

2.3 By their very nature, trees can never be entirely free of risk. The laws and forces of nature dictate a failure rate, even among intact trees with no apparent defects. The recommendations in this report cannot guarantee the elimination of all risk.

2.4 The report does not include risk assessment of trees in relation to subsidence.

3. Introduction

3.1 Qualifications

3.1.1 I hold an FdSc in Arboriculture from Northampton University and Level 5 HE Diploma in Arboriculture from Moulton College. I have also hold Lantra Professional Tree Inspection certification (PTI).

3.2 Site Description

3.2 The property is a private residential garden with the tree located towards the rear boundary.

3.3 Trees

3.3.1 The tree in question is a mature Oak (*Quercus robur*) Full tree details and observations from the initial visual assessment are recorded in Appendix 1.

4. Methodology

4.1 Decay detection was undertaken using a Resistograph Resi-PD400 microdrill. The Resi-PD400 accurately measures the drilling and feed resistance along a needle as it is inserted at a constant rate into the wood of a tree. This enables small changes of internal wood structure to be detected. Readings from each drilling can be found in Appendix 2 of this report.

4.2 Tree height was recorded using a Haglofs Digital Clinometer and laser distance measurement device. Stem diameter measurement was recorded using a diameter measuring tape.

5. Documents provided

- Tree survey schedule (Appendix 1.)
- Resistograph drill readings (Appendix 2.)

6. Findings

6.1 Decay detection

6.1.1 The tree was drilled at the cardinal and intercardinal points at ground level. It was then drilled at 0.5m and 1m. The North side was unsuitable for drilling due to the proximity of the boundary fence.

6.1.2 Tables 1 provides an interpretation of the readings. The reading graphs are included in Appendix 2.

Table 1

Drill no.	Position	Interpretation
1	0.1m East	Typical amplitude for sound wood up to 19cm depth. Drop in amplitude at 2-7.5cm and 15-40cm indicating advanced decay/hollowing. Slight drop in amplitude at 12-14cm indicating possible small area of initial stage decay.
2	0.1m South-East-East	Typical amplitude for sound wood up to 10cm depth. Slight drops in amplitude at 10-17cm and 35-36cm depth indicating possible initial stage decay. Significant drop in amplitude 36-40cm depth indicating advanced decay/hollowing.
3	0.1m South-East	Typical amplitude for sound wood up to 40cm depth.
4	0.1m South	Typical amplitude for sound wood up to 28cm depth. Drop in amplitude from 28-40cm indicating advanced decay/hollowing.
5	0.1m South-West	Typical amplitude for sound wood up to 2cm depths. Drops in amplitude at 2-5.2cm and 20-40cm depth indicating advanced decay/hollowing.
6	0.1m West	Typical amplitude for sound wood up to 12.8cm depth. Drop in amplitude at 12.8-40cm depth indicating advanced decay/hollowing.
7	0.1m North-West-West	Typical amplitude for sound wood up to 2.2cm depth. Drops in amplitude at 2.2-4.9cm and 16.6-40cm depths indicating advanced decay/hollowing.
8	0.1m North-West-West	Typical amplitude for sound wood up to 10cm depth. Slight drop in average amplitude at 28.5-31cm depth indicating possible initial stage decay.

Drill no.	Position	Interpretation
9	0.1m North-East	Typical amplitude for sound wood up to 10cm depth. Drop in average amplitude at 38-40cm depth indicating initial stage decay.
10	0.1m North-East-East	Typical amplitude for sound wood up to 40cm depth.
11	0.5m East	Typical amplitude for sound wood up to 10cm depth. Slight drop in amplitude at 18-19cm depth indicating possible initial stage decay. Significant drop in amplitude 28-40cm depth indicating advanced decay/hollowing.
12	0.5m South-East	Typical amplitude for sound wood up to 28cm depth. Slight drop in average amplitude at 28-30cm depth indicating possible initial stage decay.
13	0.5m South	Typical amplitude for sound wood up to 1.5cm depth. Drops in amplitude at 1.5-3.4cm and 30-40cm depths indicating areas of advanced decay/hollowing.
14	0.5m South-West	Typical amplitude for sound wood up to 1.9cm depth. Drops in amplitude at 1.9-3.8cm and 16-40cm depths indicating areas of advanced decay/hollowing.
15	0.5m West	Typical amplitude for sound wood up to around 2cm depth. Drops in amplitude at 2-4cm, 15-16cm, 16.8-20.5cm, 27.8-30cm and 32.5-33.5cm depths indicating areas of advanced decay/hollowing.
16	0.5m North-West	Typical amplitude for sound wood up to 15cm depth. Drops in amplitude at 15-17cm and 31-37cm depths indicating areas of advanced decay/hollowing. Slight drops in amplitude from 17-18cm and 27-31cm indicate possible areas of initial stage decay.
17	1m East	Typical amplitude for sound wood up to 2cm depth. Slight drops in average amplitude at 2-6cm and 19-24cm depth indicating possible initial stage decay.

7. Analysis

7.1 Using Mattheck and Breoler's "t/R ratio", which suggests that a tree should have at least 33% holding wood across the radius of the stem to retain a sound structure, tree T1 should have a minimum of 22.8cm sound wood around the outside of the stem.

7.2 The diameter of the tree (137cm) is larger than the depth possible to measure to with the device (40cm of the radius). Given the decay strategy of the fungal fruiting bodies on the stem (*Ganoderma australe*), it is highly likely (and been assumed) that the heartwood has been compromised and has areas of decay/hollowing.

7.3 Based on the drill readings (Table 1) the trunk has an average of 62% remaining sound wood at 0.1m from ground level. This drops to around 45% if it is assumed that the heartwood has been decayed (see 7.2).

7.4 Four of the readings taken at 0.1m are below the 22.8cm recommended sound wood retained and another two are close to this number, however.

7.4 The fungal brackets have multiple shelves, indicating that the fungi has been present for a number of years and there are no significant buttress root formations indicating reactive wood development at the base of the stem.

7.5 Readings taken at 0.5m show some areas of decay, indicating that this is likely spreading up into the stem.

7.6 The recent fallen limb can be attributed to summer limb drop which occurs when the tree is under stress, usually in extended periods of dry weather.

8. Conclusions

8.1 Following the decay detection investigation, it is my opinion that the tree currently poses a moderate risk of harm to people and property in its current form, with the crown extending over a number of private residential gardens and within potential target area of houses.

8.2 The readings appear to show an area of sound wood towards the northern side of the stem with decay more localised to the south and eastern sides. Four of the readings show less than 12cm of sound wood remaining around the circumference of the stem, well below the recommended 22.8cm.

8.2 The tree does not appear to have put on any significant buttress root growth, indicating that the tree has not responded to the infection with additional supporting wood.

8.4 Pollarding or heavy reduction would likely be a temporary measure with large wounds leaving the tree prone to further infections or degradation of the exposed wood. Pollarding would also likely kill a tree of this size, given that over 60% of the tree would be removed.

9. Recommendations

9.1 Remove the tree as close to ground as reasonably possible, to eliminate the risk of failure as the decay continues.

9.2 Information available from Hillingdon Council's online mapping services show that the tree is protected by an area tree preservation order (TPO) number TPO291. Please note that any recommended works would require written approval from the local authority which can take 8 weeks to receive a decision. It should also be noted that the Arboricultural officer may refuse the application or request further evidence at their discretion.

Appendix 1

ARTEMIS TREE SERVICES

Tree Ref.	Species	Height (m)	Stem diameter (cm)	Crown spread (m)	Age class	Physiological condition	Structural condition	Observations
T1	Oak (*Quercus robur*)	20	137	18	M	G	F	Tear from recent limb failure at around 10m to S. Minor deadwood in crown, typical of species. Multiple *Ganoderma australe* fungal fruiting bodies at base of stem to E. Tapping the lower stem with sounding mallet did not reveal any notable audible hollowing. Multiple historic wounds show good wound wood development and no visible decay of exposed sapwood. Woodpecker holes at 7m to E on main stem and at around 14m on large limb to NW.

Appendix 1

ARTEMIS TREE SERVICES

Survey Key

Diameter (mm)
Stem diameter in millimetres measured at 1.5m above ground level. Where the stem is divided below 1.5m, measurement is taken as directed by BS:5837 Annex C.

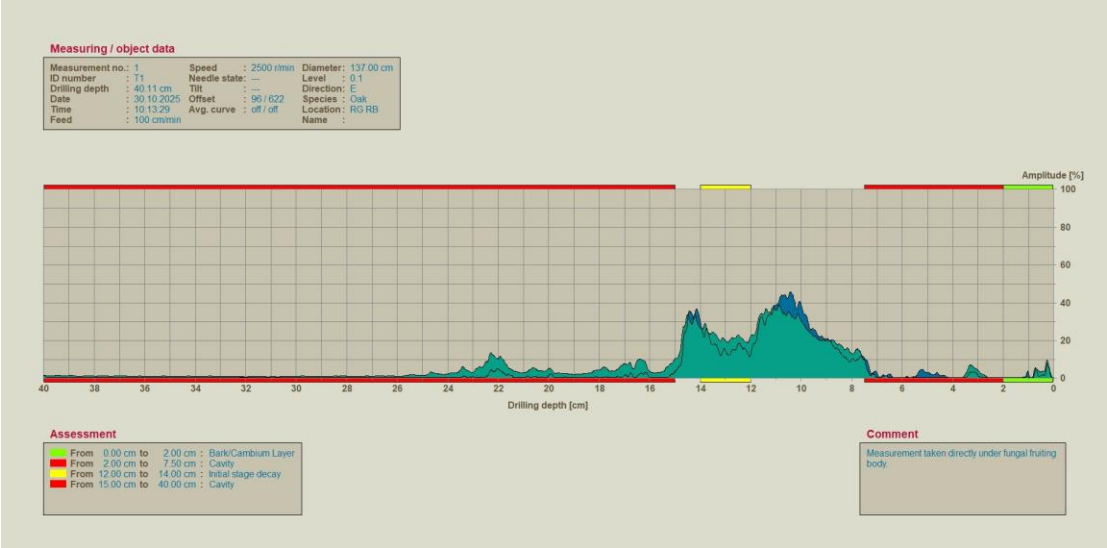
Branch Spread (m)
Radial crown spread in metres, measured for each of the four cardinal points of the compass from the centre of the trunk.

Age class
(NP) Newly planted – a tree within 3 years after planting
(Y) Young – a tree within its first one third of life expectancy
(EM) Early Mature – a tree within its second third of life expectancy
(M) Mature – a tree in its final one third of life expectancy
(OM) Over Mature – a tree having reached its maximum life span and is declining in health and size due to old age
(V) Veteran – a tree in the second or mature stage of its life and has important wildlife and habitat features including; hollowing or associated decay fungi, holes, wounds and large dead branches.
(A) Ancient – a tree in the ancient or third and final stage of their life that is of interest biologically, aesthetically or culturally because of its age, size and condition

Physiological Condition
GOOD – a tree in a healthy condition with no significant problems
FAIR – a tree generally in good health with some problems that can be remediated
POOR – a tree in poor health with significant problems that cannot be remediated
DEAD – a tree without sufficient live material to sustain life

Structural Condition
An assessment of the structural/safe condition of the tree categorised into:
GOOD – a tree in a safe condition with no significant defects
FAIR – a tree in a safe condition at present but with defects or with significant defects that can be remediated
POOR – a tree with significant defects that cannot be remediated

Appendix 2


Measuring / object data
Measurement no.: 1
ID number : T1
Drilling depth : 40.11 cm
Date : 30.10.2025
Time : 10:13:29
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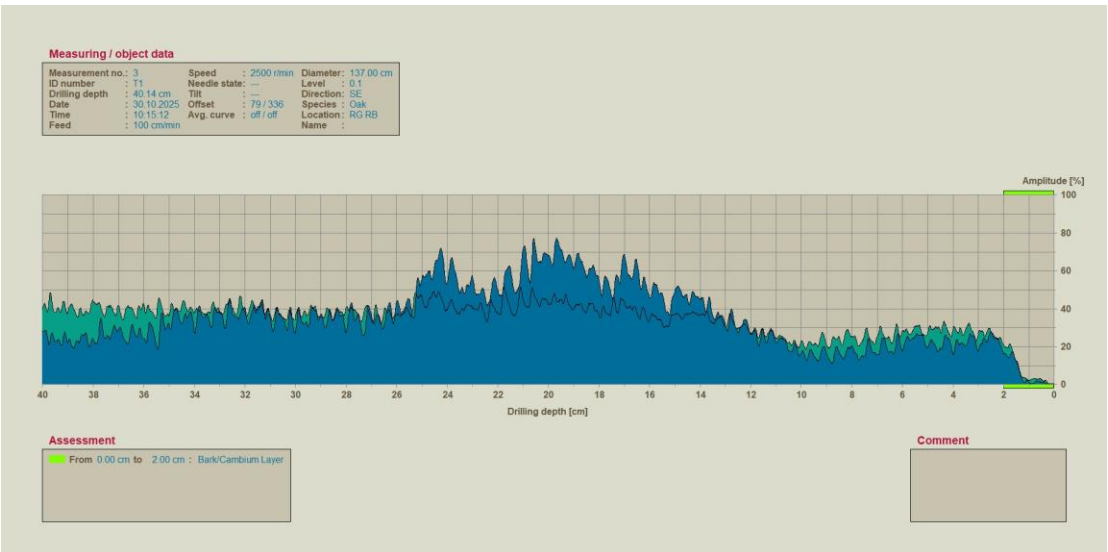
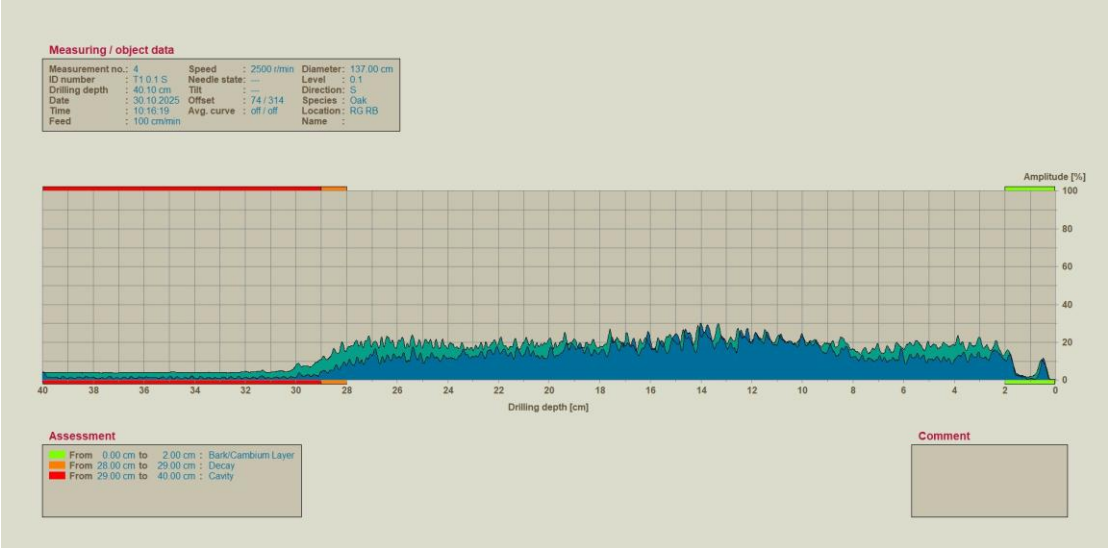
Speed : 2500 r/min
Needle state: ---
Tilt : ---
Offset : 96 / 622
Avg. curve : off / off
Diameter: 137.00 cm
Level : 0.1
Direction: E
Species : Oak
Location : RG RB
Name :
Amplitude [%]
Drilling depth [cm]
Assessment
From 0.00 cm to 2.00 cm : Bark/Cambium Layer
From 2.00 cm to 7.50 cm : Cavity
From 12.00 cm to 14.00 cm : Initial stage decay
From 15.00 cm to 40.00 cm : Cavity
Comment
Measurement taken directly under fungal fruiting body.


Measuring / object data
Measurement no.: 2
ID number : T1
Drilling depth : 40.10 cm
Date : 30.10.2025
Time : 10:14:15
Feed : 100 cm/min
Speed : 2500 r/min
Needle state: ---
Tilt : ---
Offset : 84 / 304
Avg. curve : off / off
Diameter: 137.00 cm
Level : 0.1m
Direction: SEE
Species : Oak
Location : RG RB
Name :
Amplitude [%]
Drilling depth [cm]
Assessment
From 0.00 cm to 2.00 cm : Bark/Cambium Layer
From 10.00 cm to 19.00 cm : Initial stage decay
From 35.00 cm to 36.00 cm : Initial stage decay
From 36.00 cm to 40.00 cm : Decay
Comment
Measurement taken adjacent to (clockwise) from fungal fruiting bodies


Measuring / object data
Measurement no.: 3
ID number : T1
Drilling depth : 40.14 cm
Date : 30.10.2025
Time : 10:15:12
Feed : 100 cm/min
Speed : 2500 r/min
Needle state: ---
Tilt : ---
Offset : 79 / 336
Avg. curve : off / off
Diameter: 137.00 cm
Level : 0.1
Direction: SE
Species : Oak
Location : RG RB
Name :
Amplitude [%]
Drilling depth [cm]
Assessment
From 0.00 cm to 2.00 cm : Bark/Cambium Layer
Comment

Appendix 2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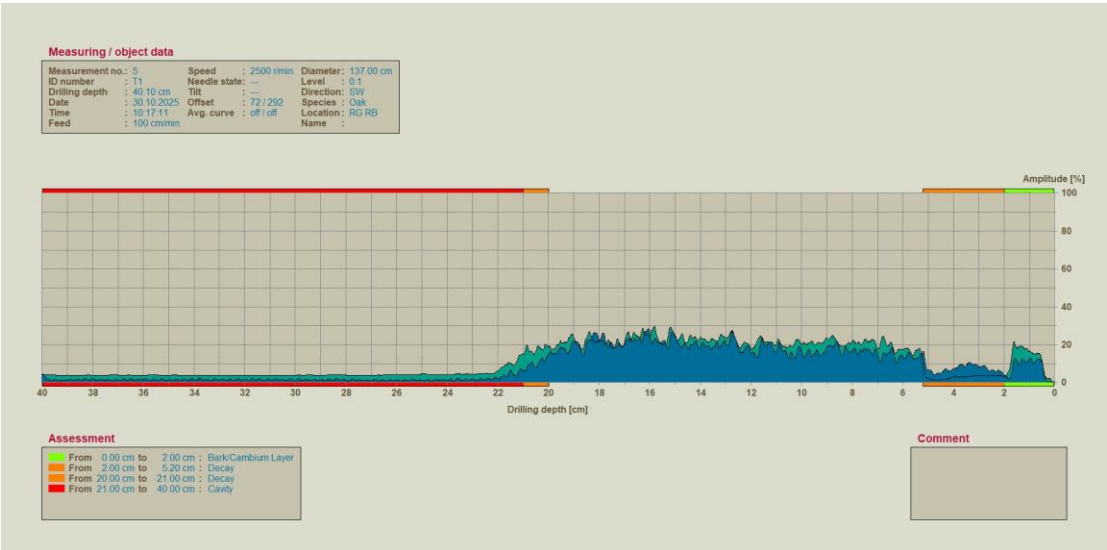
Date : 30.10.2025
Time : 10:16:19
Feed : 100 cm/min
Speed : 2500 r/min
Needle state: ---
Tilt : ---
Offset : 74 / 314
Avg. curve : off / off
Diameter: 137.00 cm
Level : 0.1
Direction: S
Species : Oak
Location : RG RB
Name :
Amplitude [%]
Drilling depth [cm]
Assessment
From 0.00 cm to 2.00 cm : Bark/Cambium Layer
From 28.00 cm to 29.00 cm : Decay
From 29.00 cm to 40.00 cm : Cavity
Comment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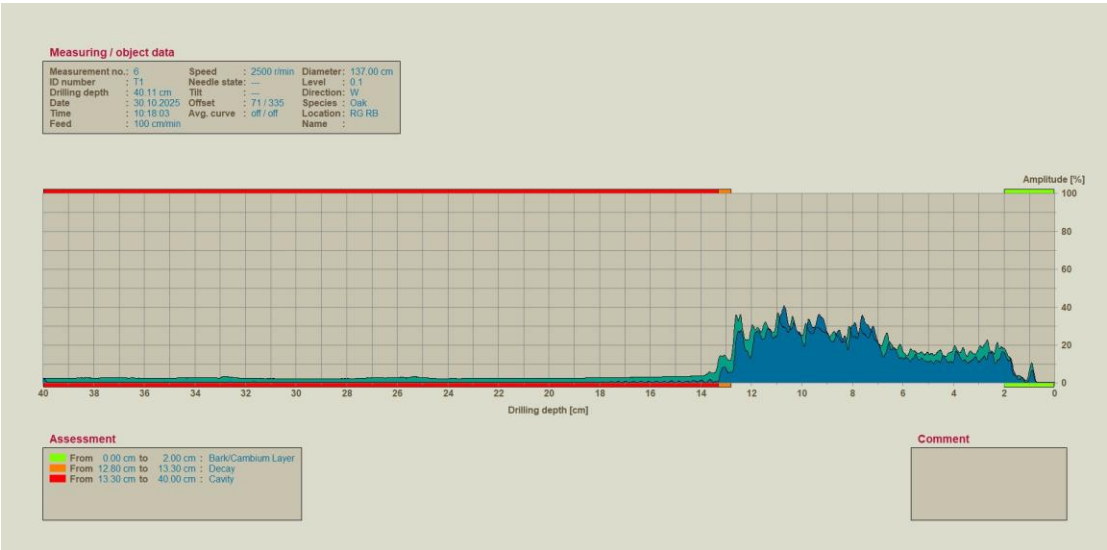
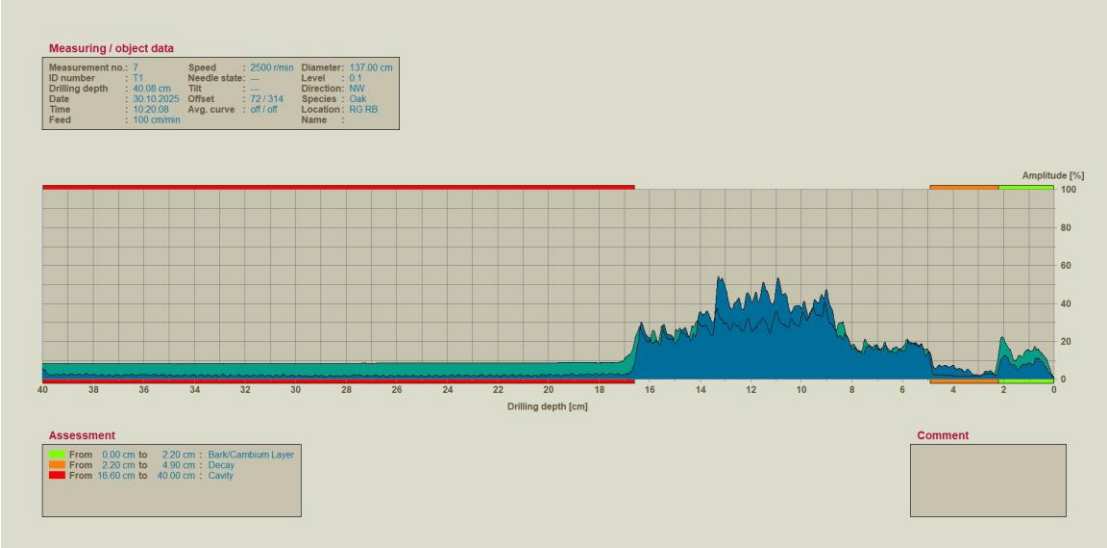
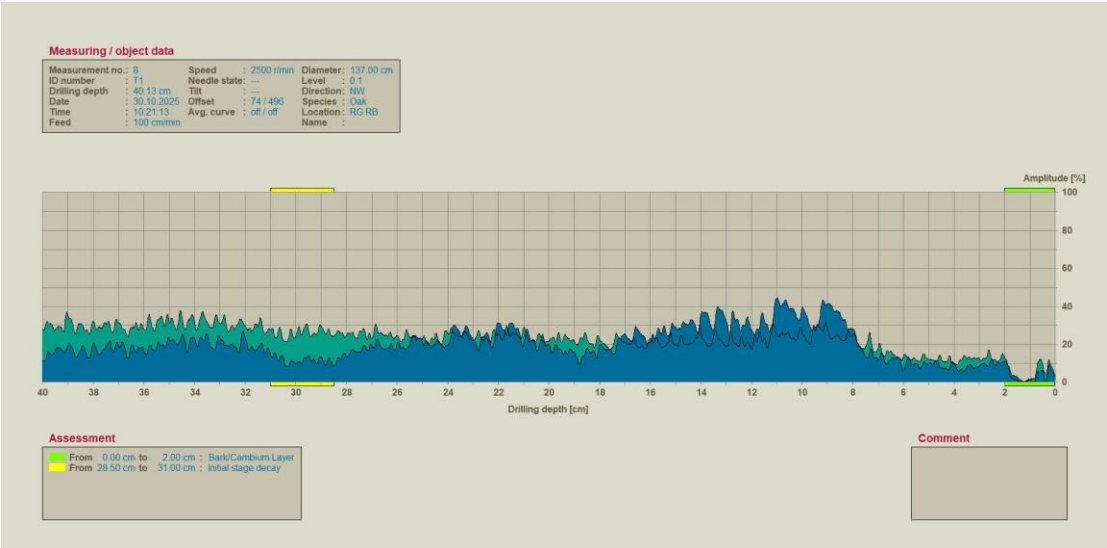
Measurement no.: 5
ID number : T1
Drilling depth : 40.10 cm
Date : 30.10.2025
Time : 10:17:11
Feed : 100 cm/min
Speed : 2500 r/min
Needle state: ---
Tilt : ---
Offset : 72 / 292
Avg. curve : off / off
Diameter: 137.00 cm
Level : 0.1
Direction: SW
Species : Oak
Location : RG RB
Name :
Amplitude [%]
Drilling depth [cm]
Assessment
From 0.00 cm to 2.00 cm : Bark/Cambium Layer
From 2.00 cm to 5.20 cm : Decay
From 20.00 cm to 21.00 cm : Decay
From 21.00 cm to 40.00 cm : Cavity
Comment

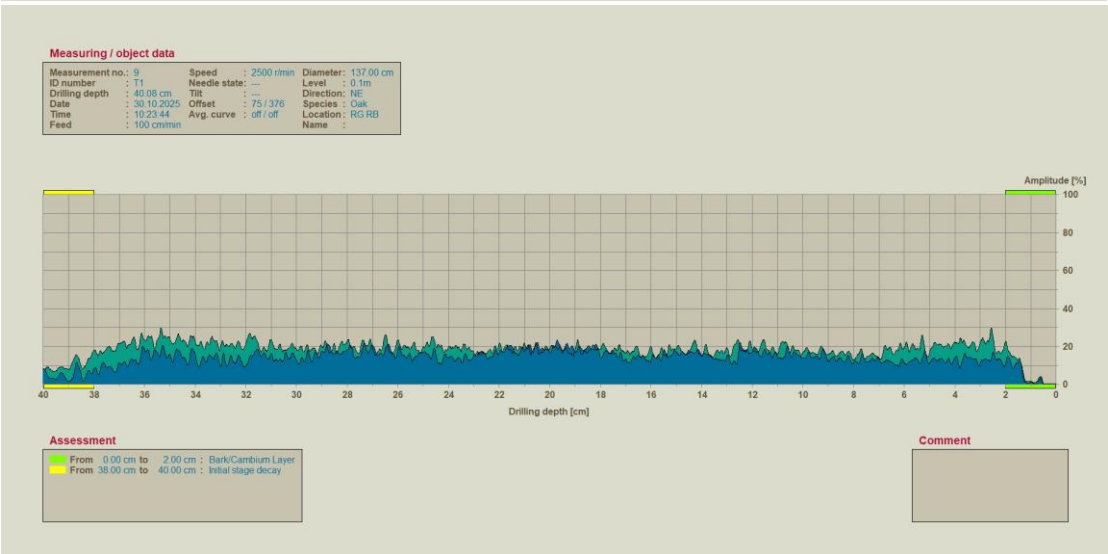

Measuring / object data
Measurement no.: 6
ID number : T1
Drilling depth : 40.11 cm
Date : 30.10.2025
Time : 10:18:03
Feed : 100 cm/min
Speed : 2500 r/min
Needle state: ---
Tilt : ---
Offset : 71 / 335
Avg. curve : off / off
Diameter: 137.00 cm
Level : 0.1
Direction: W
Species : Oak
Location : RG RB
Name :
Amplitude [%]
Drilling depth [cm]
Assessment
From 0.00 cm to 2.00 cm : Bark/Cambium Layer
From 12.80 cm to 13.30 cm : Decay
From 13.30 cm to 40.00 cm : Cavity
Comment

Appendix 2

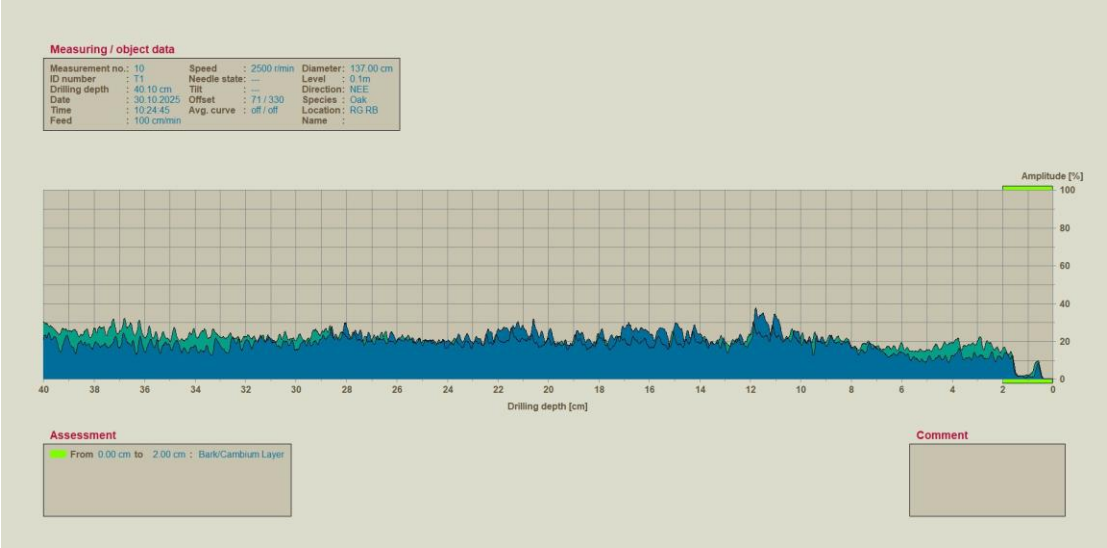
ARTEMIS TREE SERVICES

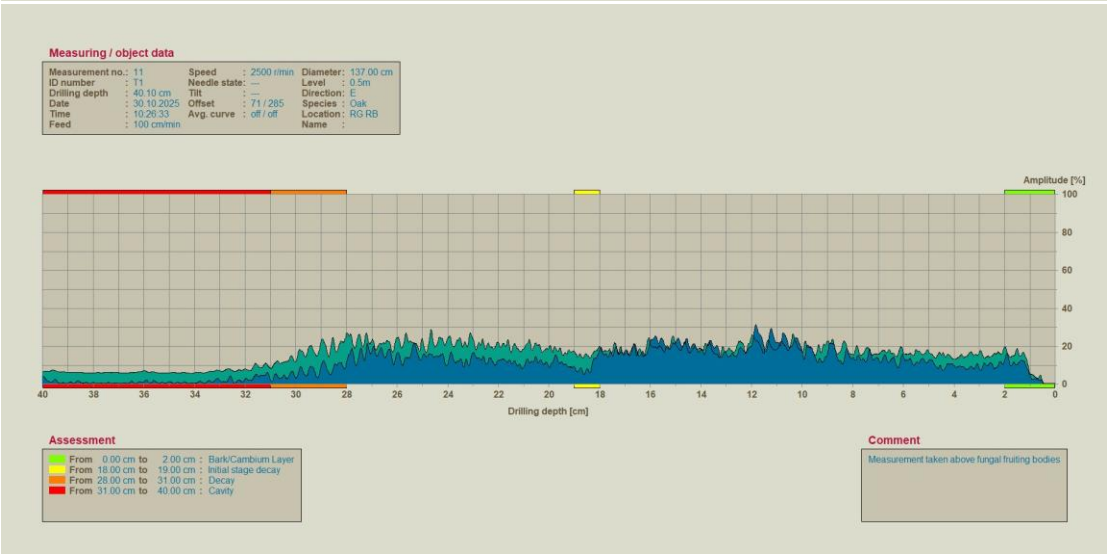






Appendix 2


Measuring / object data
Measurement no.: 10
ID number : T1
Drilling depth : 40.10 cm
Date : 30.10.2025
Time : 10:24:45
Feed : 100 cm/min
Speed : 2500 r/min
Needle state: ---
Tilt : ---
Offset : 71 / 330
Avg. curve : off / off
Diameter: 137.00 cm
Level : 0.1m
Direction: NEE
Species : Oak
Location : RG RB
Name :
Amplitude [%]
100
80
60
40
20
0
40 38 36 34 32 30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0
Drilling depth [cm]
Assessment
From 0.00 cm to 2.00 cm : Bark/Cambium Layer
Comment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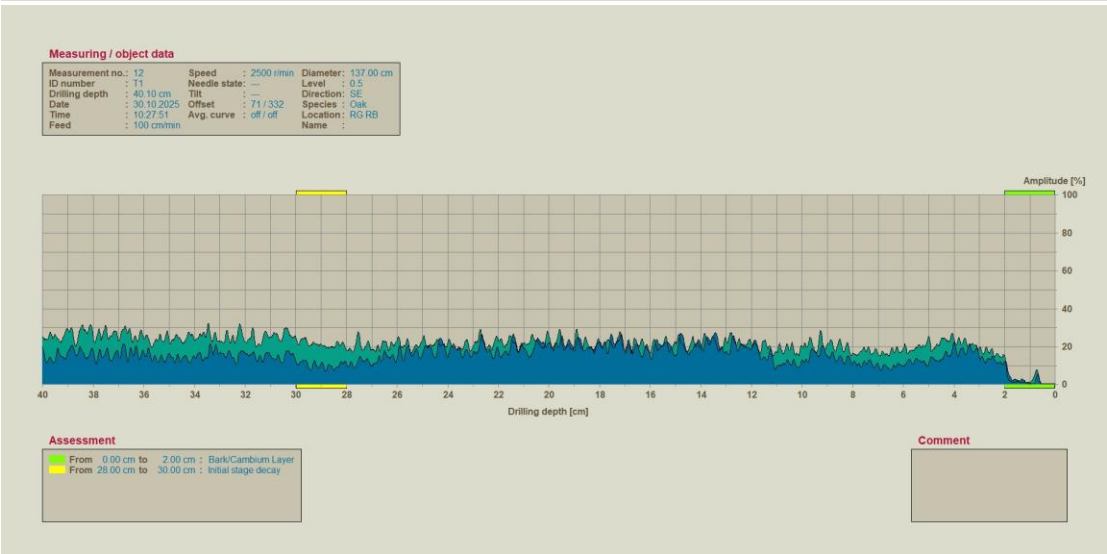
Measurement no.: 11
ID number : T1
Drilling depth : 40.10 cm
Date : 30.10.2025
Time : 10:26:33
Feed : 100 cm/min
Speed : 2500 r/min
Needle state: ---
Tilt : ---
Offset : 71 / 285
Avg. curve : off / off
Diameter: 137.00 cm
Level : 0.5m
Direction: E
Species : Oak
Location : RG RB
Name :
Amplitude [%]
100
80
60
40
20
0
40 38 36 34 32 30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0
Drilling depth [cm]
Assessment
From 0.00 cm to 2.00 cm : Bark/Cambium Layer
From 18.00 cm to 19.00 cm : Initial stage decay
From 28.00 cm to 31.00 cm : Decay
From 31.00 cm to 40.00 cm : Cavity
Comment
Measurement taken above fungal fruiting bodies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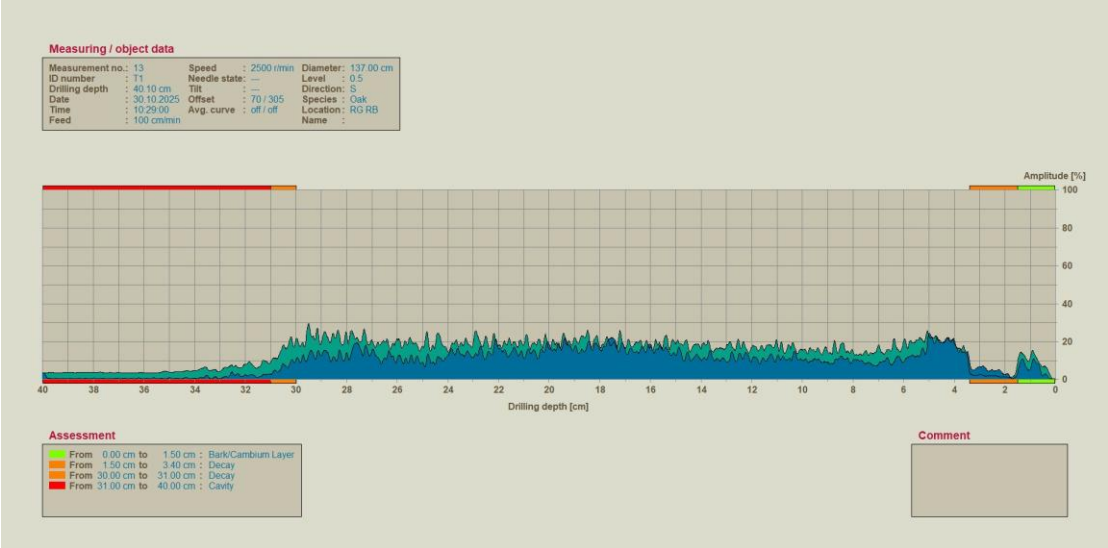
ID number : T1
Drilling depth : 40.10 cm
Date : 30.10.2025
Time : 10:27:51
Feed : 100 cm/min
Speed : 2500 r/min
Needle state: ---
Tilt : ---
Offset : 71 / 332
Avg. curve : off / off
Diameter: 137.00 cm
Level : 0.5
Direction: SE
Species : Oak
Location : RG RB
Name :
Amplitude [%]
100
80
60
40
20
0
40 38 36 34 32 30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0
Drilling depth [cm]
Assessment
From 0.00 cm to 2.00 cm : Bark/Cambium Layer
From 28.00 cm to 30.00 cm : Initial stage decay
Comment

Appendix 2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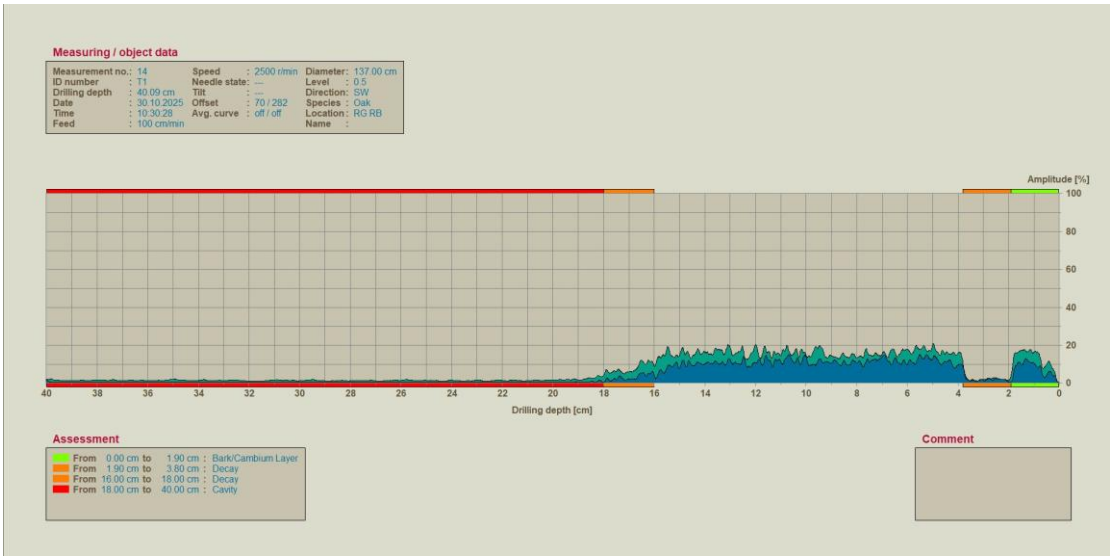
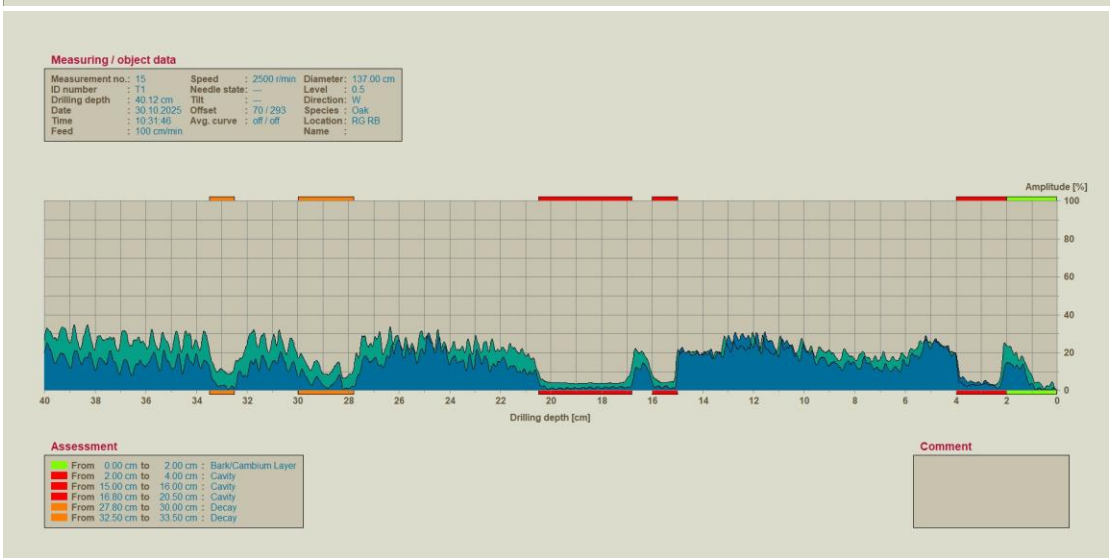
Measurement no.: 13
ID number : T1
Drilling depth : 40.10 cm
Date : 30.10.2025
Time : 10:29:00
Feed : 100 cm/min
Speed : 2500 r/min
Needle state: ---
Tilt : ---
Offset : 70 / 305
Avg. curve : off / off
Diameter: 137.00 cm
Level : 0.5
Direction: S
Species : Oak
Location: RG RB
Name :
Amplitude [%]
Drilling depth [cm]
Assessment
From 0.00 cm to 1.50 cm : Bark/Cambium Layer
From 1.50 cm to 3.40 cm : Decay
From 30.00 cm to 31.00 cm : Decay
From 31.00 cm to 40.00 cm : Cavity
Comment


Measuring / object data
Measurement no.: 14
ID number : T1
Drilling depth : 40.09 cm
Date : 30.10.2025
Time : 10:30:28
Feed : 100 cm/min
Speed : 2500 r/min
Needle state: ---
Tilt : ---
Offset : 70 / 282
Avg. curve : off / off
Diameter: 137.00 cm
Level : 0.5
Direction: SW
Species : Oak
Location: RG RB
Name :
Amplitude [%]
Drilling depth [cm]
Assessment
From 0.00 cm to 1.90 cm : Bark/Cambium Layer
From 1.90 cm to 3.80 cm : Decay
From 16.00 cm to 18.00 cm : Decay
From 18.00 cm to 40.00 cm : Cavity
Comment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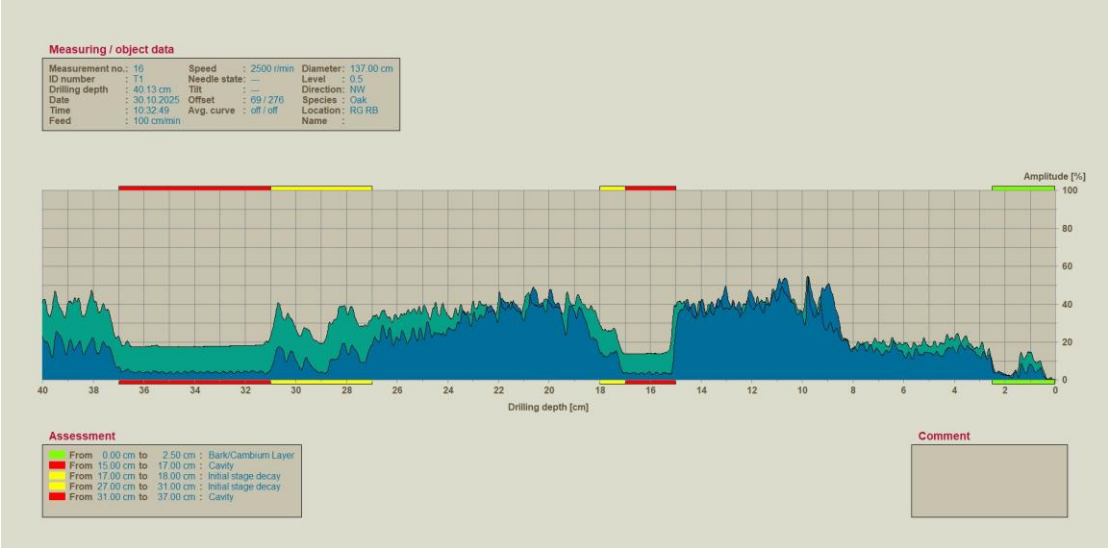
Measurement no.: 15
ID number : T1
Drilling depth : 40.12 cm
Date : 30.10.2025
Time : 10:31:46
Feed : 100 cm/min
Speed : 2500 r/min
Needle state: ---
Tilt : ---
Offset : 70 / 293
Avg. curve : off / off
Diameter: 137.00 cm
Level : 0.5
Direction: W
Species : Oak
Location: RG RB
Name :
Amplitude [%]
Drilling depth [cm]
Assessment
From 0.00 cm to 2.00 cm : Bark/Cambium Layer
From 2.00 cm to 4.00 cm : Cavity
From 15.00 cm to 16.00 cm : Cavity
From 16.80 cm to 20.50 cm : Cavity
From 27.80 cm to 30.00 cm : Decay
From 32.50 cm to 33.50 cm : Decay
Comment

Appendix 2


Measuring / object data
Measurement no.: 16
ID number : T1
Drilling depth : 40.13 cm
Date : 30.10.2025
Time : 10:32:49
Feed : 100 cm/min
Speed : 2500 r/min
Needle state: ---
Tilt : ---
Offset : 69 / 276
Avg. curve : off / off
Diameter: 137.00 cm
Level : 0.5
Direction: NW
Species : Oak
Location : RG RB
Name :
Amplitude [%]
100
80
60
40
20
0
40 38 36 34 32 30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0
Drilling depth [cm]
Assessment
From 0.00 cm to 2.50 cm : Bark/Cambium Layer
From 15.00 cm to 17.00 cm : Cavity
From 17.00 cm to 18.00 cm : Initial stage decay
From 27.00 cm to 31.00 cm : Initial stage decay
From 31.00 cm to 37.00 cm : Cavity
Comment


Measuring / object data
Measurement no.: 17
ID number : T1
Drilling depth : 40.11 cm
Date : 30.10.2025
Time : 10:38:28
Feed : 100 cm/min
Speed : 2500 r/min
Needle state: ---
Tilt : ---
Offset : 74 / 285
Avg. curve : off / off
Diameter: 137.00 cm
Level : 1m
Direction: E
Species : Oak
Location : RG RB
Name :
Amplitude [%]
100
80
60
40
20
0
40 38 36 34 32 30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0
Drilling depth [cm]
Assessment
From 0.00 cm to 2.00 cm : Bark/Cambium Layer
From 2.00 cm to 6.00 cm : Initial stage decay
From 19.00 cm to 24.00 cm : Initial stage decay
Comment
Measurement taken above fungal fruiting bodies

Appendix 2

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Appendix 2

ARTEMIS TREE SERVICES

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