

July 10, 2019

Location:

100 West Hillside Ave, San Anselmo, CA.

Observations and Discussions:

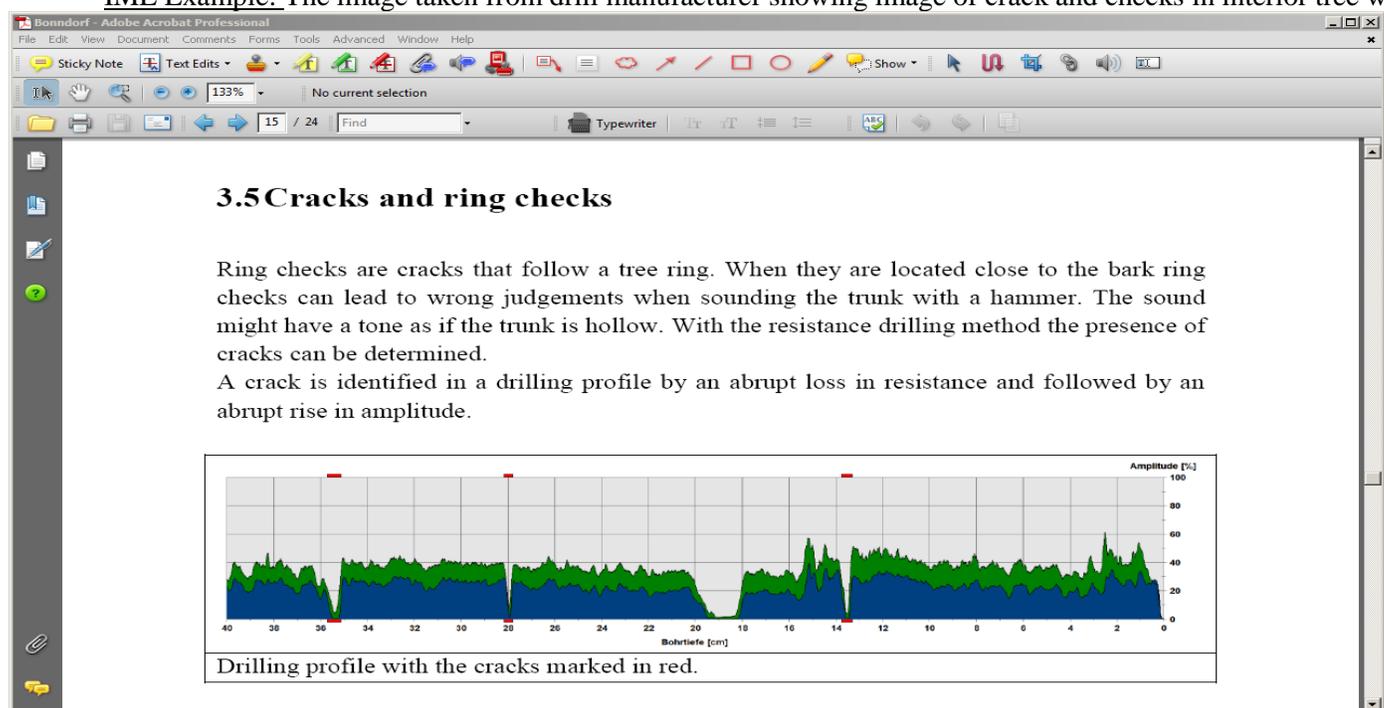
Information is presented for the consideration to determine a proposed removal of a *Quercus agrifolia*, Coast Live Oak tree located on an access roadway to several properties. The request for removal is for a property development and the tree is reported as hazardous. An opinion letter from ESH Consultants Fire Protection Engineers suggests that the Oak tree be removed for fire vehicle maneuvering. These two aspects for the property development and vehicle maneuvering requirements are beyond the focus of this report and this report focuses on this Coast Live Oak tree's condition and recommendation to provide direction for administrative decision solution.

Information was provided from Kent Julin report, testing to verify the degree of branch failure from a visible outer limb crack, and described as a shear plane crack that compromised the limb ability to support itself:

- Additional information was requested and presented in a June 3, 2019, report that included testing with electronic arboricultural equipment to support and justify the defect described as a shear plane crack.
- The report concludes that the tree be removed as soon as possible because it presents a high failure risk to people and property. A Basic Tree Risk Assessment form indicates that the conditions affecting the likelihood of failure is a 14-inch limb with a shear plane crack.

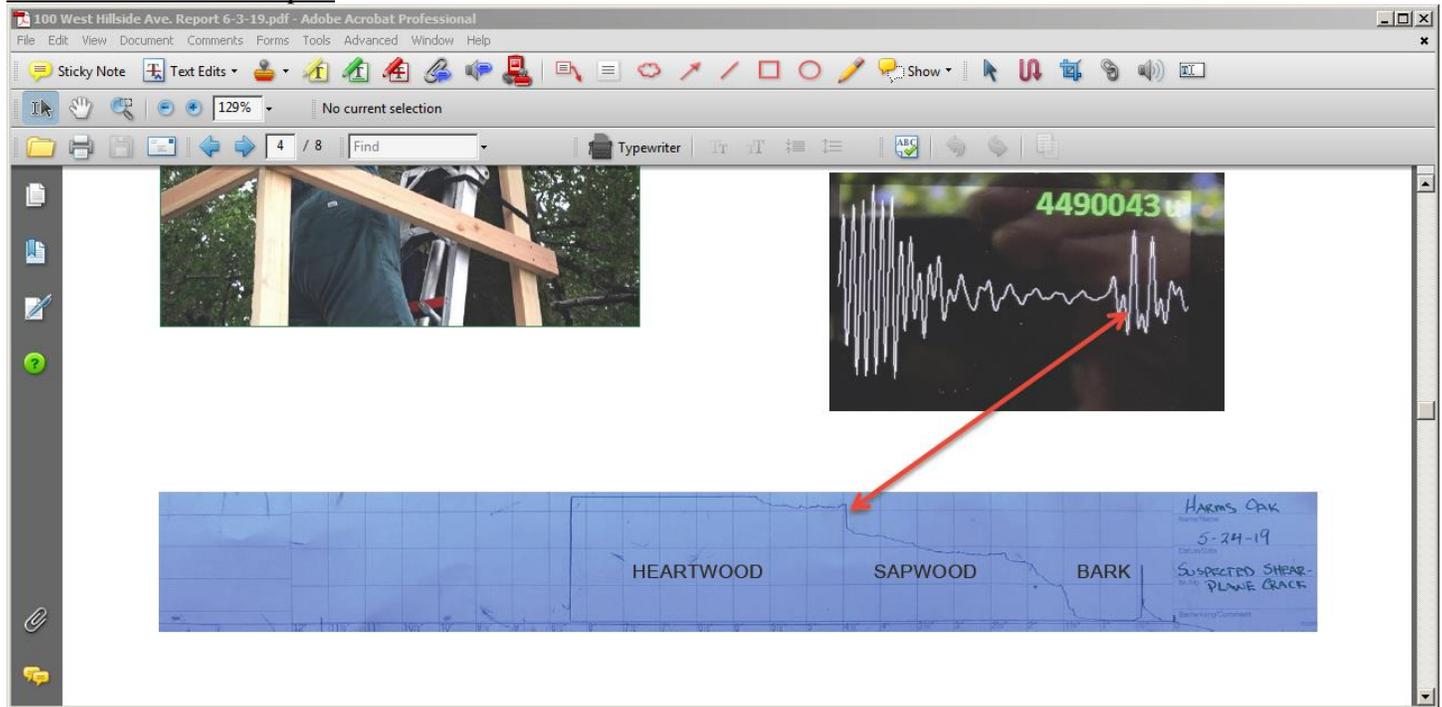
In the opinion of this review, cracks are measured with specialty tools including resistance drills that measure wood integrity and results are displayed on graphs that are projected as amplitude readings on the graph. Therefore, a crack would register as a drop in amplitude (loss of resistance) and as the drill needle encounters solid wood (resistance), the amplitude would spike on the recording graph.

IML Example: The image taken from drill manufacturer showing image of crack and checks in interior tree wood.



In the resistance drill measurement for this Oak tree there is an increase in amplitude recorded by the drill reading when it transitions from sap to heartwood but there is not the abrupt drop in drill profile indicating a separation or void created by a crack. There is not a clear explanation why this reading drop is missing in the drill reading profile as it transitions from sap to heartwood.

Profile from the Julin report



There may be other unknown reasons for the discrepancies in these two readings measuring interior wood cracks. The former drill profile, the IML reading on page one of this report is established by the drill manufacturer and taken from the manual. The manual suggests that drill speed setting, angle of drill path, and a dull needle drill tip would alter a reading. A communicate with the manufacturer suggests that additional drill testing and documentation could provide a more accurate understanding and resolve questions of the test process.

Recommendation:

The Coast Live Oak tree was inspected during a site visit and the outer limb separation that resembled a longitude separation did not progress into the limb of the tree from the outer surface. This is not a definitive conclusion that an internal radial crack may not be present. However, the resistance drill measurement does not record a drop in resistance along the drill path. It does show a transition when the drill needle passes from sap to heartwood. In conclusion, this review would require additional testing and details of additional test that could answer present questions before a decision can be made. The manufacturer manual describes that if a clear interpretation of the drill reading can be made the additional testing is necessary.

Ed Gurka Consulting Arborist Services

San Rafael, CA. 94901

Mobile: 415 601-5337

Email: Egurka1@aol.com

Affiliations and Licenses:

International Society of Arboriculture, Certified Arborist # 418, 1984 to present

Western Chapter ISA, Certified Arborist #418, 1984-to present

American Society of Consulting Arborists, Member, 2000 to present

California Department of Pesticide Regulation, Pest Control Advisor PCA 74846, 1989 to present

City of Sausalito, Municipal Arborist, 1989-2004

Independent Consulting Arborist Services, 2004-present