

An exploratory study of arsenic in annual tree rings at an EPA superfund site in Vineland, New Jersey

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ABSTRACT. Tree rings are known to be a useful tool for studying past climate change. Elemental concentrations in dated tree rings, or the so called dendrochemistry, can provide a temporal record of environmental change (e.g., Rolfe, 1974; Baes and McLaughlin, 1984; Vrobesky and Yanosky, 1990; Hageneyer, 1993; Smith and Shortle, 1996). Little is known about arsenic (As) in trees, not to mention the potential of tree rings as a biological monitor for past arsenic pollution. Dead and growing trees at a former pesticide-manufacturing site, now an EPA superfund site being cleaned up, offers an opportunity to study how the levels of arsenic in annual tree rings have responded to this localized but severe contamination. Radial distribution pattern of As in tree rings may reflect the availability of As in soil and pore water, and it may also bear a significant effect, if not dominant control, from climatic and hydrological conditions.