

The Forensic Analysis of Perth's Soils

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The examination and comparison of soil and related material transferred in situations of contact is a powerful method for linking persons, vehicles, equipment and locations. The evidential value of soil comparison derives from its widespread distribution, highly variable composition, relative ease of transfer, persistence and resistance to degradation. Sandy soils, present a challenge, with minimal organic material and heavy minerals resulting in limited material for comparisons, regardless of the bulk amounts present. One such area of forensic importance is the Swan Coastal Plain in Western Australia, covering much of the Perth metropolitan region and dominated by strongly leached sandy soils, with areas of urbanization resulting in enrichment in the soil by organic and clay materials. Analysis is undertaken using chemometric comparisons of colour, FTIR and XRD data for the inorganic fraction, and as yet underdetermined analysis for the organic fraction, with the ultimate goal of the implementation into case work. The presentation will outline the methods and recent research efforts into the further development of a reliable and objective protocol for the forensic analysis of the typical soils within Perth.