

The “Hit and Run” Case Study

- This case study involves two suspects that left the scene of a fatal car collision. One of the suspects fled the scene and was chased through a housing complex and a river. He was later seen running down the river bank, running alongside the gravel/stone river bank, jumping into the river, and then going up the opposite river bank and disappearing into the adjacent parklands.
- Two control samples were taken from the alleged “crime trail” located on the gravel/stone river bank and in the river channel. Two additional “alibi samples” were collected from the alibi trail/scene and up the river bank to determine if the suspect actually had been along the crime trail.
- The suspect was later apprehended by police but denied being along the alleged crime trail.
- A sufficient amount of the soil was recovered from the soles and sides of the shoes for forensic soil analyses by gently scraping the fine soil from the shoes using a plastic spatula.
- The soil analysis mentioned earlier were applied to the Hit and Run case. The visual comparison of the questioned samples from the shoe and control samples had remarkably similar color and texture. After analyzing the samples with XRD and DRIFT, it was concluded that the mineralogical and chemical compositions of the soil samples were closely related to one another. It can be determined that their similarity is significant because they both contain quartz, mica, albite, orthoclase, dolomite, chlorite, calcite, amphibole and kaolin.
- These comparisons indicate that the two samples have a high degree of similarity and are most likely to have been derived from the same general location. In contrast, there is a lower degree of similarity with the two alibi soils samples.
- By using this evidence in trial, the suspect was found guilty of the hit and run by the supreme court of South Australia.