

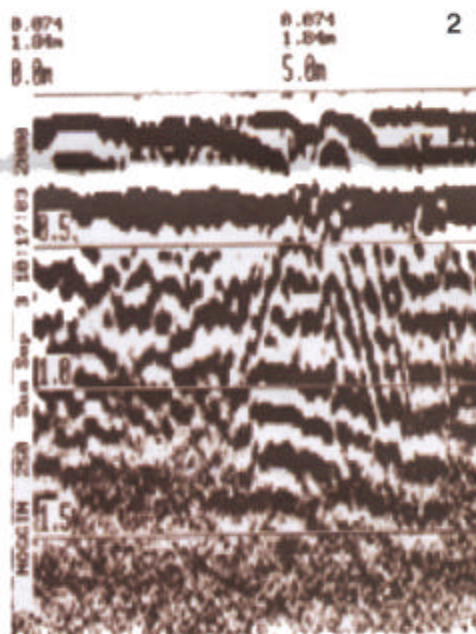
# EKKO Update

published quarterly  
by Sensors & Software Inc.

October 2000

## Forensics & GPR

Interest in the use of GPR for forensics investigations is ever increasing. Interest has been spurred by the frequent appearances of GPR in press and television coverage of high profile criminal investigations, particularly mass murders. While there are other forensics uses for GPR, such as looking for buried guns, money, drugs or crime associated items, the most noted activity by far is the location of unmarked or hidden graves.



**Figure 1:** Sensors & Software staff give a seminar on the use of GPR at a York Regional Police forensics-training course

**Figure 2:** A GPR data image showing the response of an unmarked grave. The majority of the response is believed to be caused by the boundary between the disturbed soil and the intact undisturbed soil beneath the burial location. Nothing in the data gives a strong indication of the skeletal remains which might be in the grave.



**Figure 3:** After the shallow gravesite was identified, experts trained the police officers on the proper techniques for excavating the "body", in this case a plastic skeleton.

Sensors & Software Inc. is regularly working with law enforcement groups providing training seminars on the use of GPR (Figure 1). Our goal is to establish realistic expectations for the use of GPR in police investigations.

The role of GPR is often overblown; poor judgment on the part of some GPR users has created false expectations. GPR is not a foolproof technique for such investigations. Ambiguity in the data analysis can lead to false or unsatisfying results. Given the emotionally charged state of such investigations, caution that should be applied in evaluating the results is often abandoned.

Except for recent burials, one must face the following facts:

- Decayed remains differ little from the soil in which they are buried. As a result, the GPR responses can be very weak and look similar to material soil variations.
- Investigations seldom are undertaken in smooth, open areas. GPR imaging in rough terrain with boulders, trees, roots and other obstructions make imaging ambiguous.
- Older remains are most frequently detected by the presence of disturbed soil (Figure 2) or items buried with the body (such as coffins) or voids which develop with the degradation of the human remains with time.

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