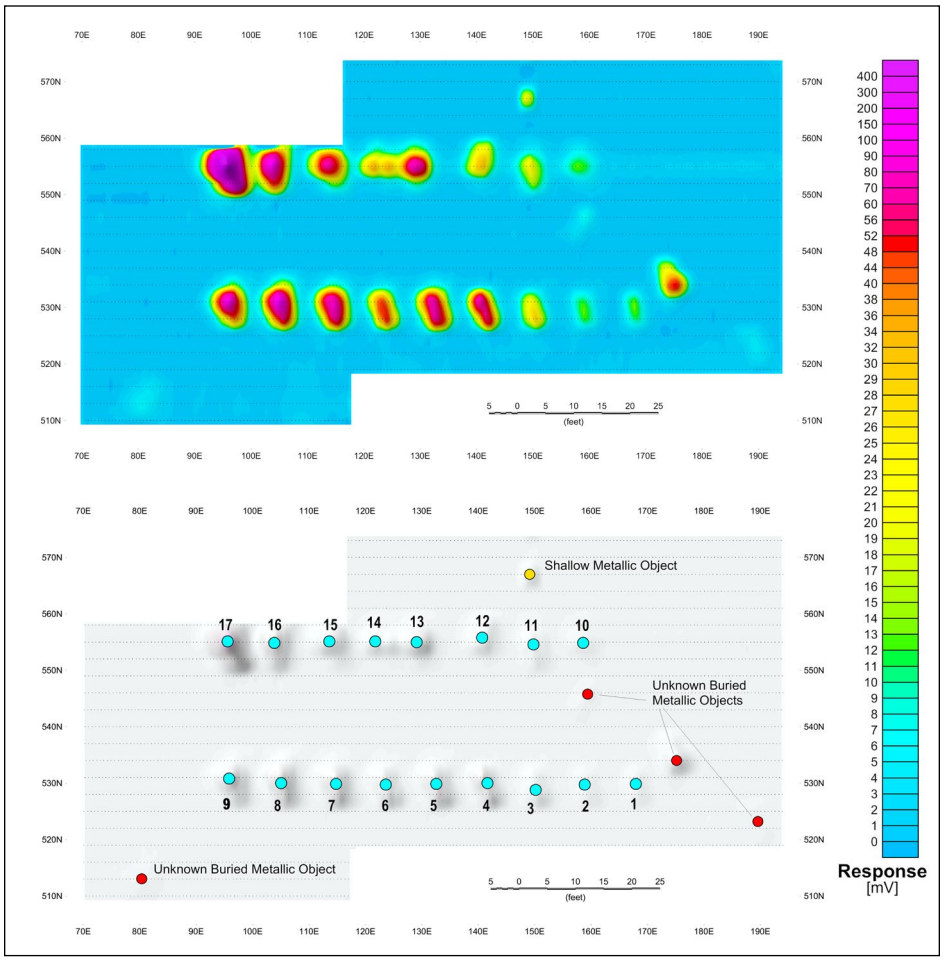
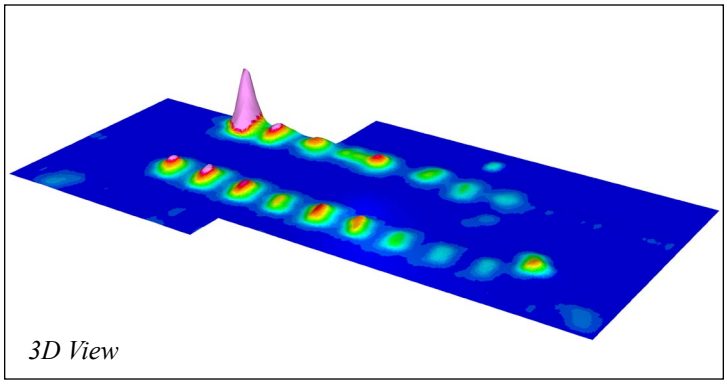
Geonics EM61 Case History - Buried Ordnance (UXO) Detection

A study area prepared by the U.S. Army Corps of Engineers contained buried inert ordnance along two W-E lines. An EM61 survey was conducted along parallel lines separated by 3 feet (0.9 m). The site map, including description of various targets and EM61 responses, is shown in figures, where it can be seen that all targets were readily detected. The calculated target depths shown in the table varied between 6% and 47% of the given depths. The given depths, however, were only measured to within 0.5 ft which in most cases is greater than the calculated error.
A magnetometer survey of the area gave substantially poorer data, and a GPS survey was totally unsuccessful in mapping the buried ordnance.





3D View

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Given and Calculated Depth			
Description of Inert Ordnance	Given Depth (ft)	Calculated Depth (ft)	Error (ft)
1. 60 mm	1.0	0.7	0.3
2. 75 mm	1.5	1.7	0.2
3. 75 mm	1.5	1.4	0.1
4. 90 mm	1.5	0.8	0.7
5. 4.2 in	1.5	1.4	0.1
6. 81 mm	2.0	1.2	0.8
7. 4.2 in	1.5	1.3	0.2
8. 4.2 in	1.5	1.0	0.5
9. 120 mm	1.5	1.3	0.2
10. 81 mm	2.0	1.7	0.3
11. 90 mm	2.0	1.5	0.5
12. 90 mm	2.0	1.8	0.2
13. 4.2 mm	2.0	1.3	0.7
14. 81 mm	2.0	1.6	0.4
15. 4.2 in	2.0	1.7	0.3
16. 106 mm	1.5	1.0	0.5
17. 155 mm	1.5	1.1	0.4

Project performed by Geomar Geophysics Ltd.