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The Application of Magnetic Methods for Dutch Archaeological Resource Management

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Preface and acknowledgements

This thesis is the result of research into *the application of magnetic methods for Dutch archaeological resource management* and forms part of a larger study: *the development of a method for the prospection, characterization and inspection of archaeological sites and landscapes in the Netherlands, using a multidisciplinary approach*. The other two sections of this larger study concern a thesis on the development of chemical prospection methods by Stijn Oonk¹ and a state of the art of remote sensing techniques by Chris Sueur². This overall project has been carried out with financial support of the Netherlands Organisation for Scientific Research (NWO) in the programme *Protecting and Developing the Dutch Archaeological-Historical Landscape (Bodemarchief in Behoud en Ontwikkeling)*, the Amsterdam Archaeological Center of the University of Amsterdam, and the Rijksdienst voor Archeologie, Cultuurlandschap en Monument at Amersfoort.

In the preamble to this program the urgent need for a larger toolbox for archaeological prospection in The Netherlands and for the integration of available methods was expressed. The studies that were to be conducted within the framework of this program needed to be tailored to be relevant for archaeological resource management (ARM), rather than having only purely scientific goals.

For this particular section of the project, many of the field studies that were carried out were integrated into existing archaeological projects, most of which were initiated to investigate the archaeological record prior to soil disturbing activities. These close encounters with the practical side of ARM have helped to focus the results of this study to the target group, i.e. to parties that are looking to implement new technology in order to improve the quality of archaeological survey results.

Readers with an archaeological background could read Chapter 1, as a general introduction, followed by Chapter 3, in which the principles behind magnetic methods are explained. Archaeological geophysicists would benefit from reading Chapter 1, the general introduction, and Chapter 2, which describes the position of geophysical methods in The Netherlands. Chapter 5 and 6 form the core of this study, whereas Chapter 7 provides an overview of magnetic anomaly shapes that were recorded in the magnetometer surveys, which could be used as reference material for the interpretation of future magnetometer survey results.

First and foremost, I would like to thank Prof. Henk Kars for giving me the opportunity and the resources to conduct my research at the Institute for Geo- and Bioarchaeology at the VU University Amsterdam. As my primary supervisor, and through his trust he has coached me to develop my teaching and project management skills.

I am much indebted to Prof. Tom Bloemers (Amsterdam Archaeological Center, University of Amsterdam), who has supported me not only during my PhD research, but throughout my archaeological career, which started in 1993. His enthusiasm and perseverance have always been an example for me.

I wish to express my heartfelt thanks to Dr. Armin Schmidt (Department of Archaeological Sciences of the University of Bradford) for the enjoyable and interesting discussions that we have had during the years. I feel that they have kept me on the right track.

I would like to extend my sincere gratitude to the people at the Paleomagnetic Laboratory Fort Hoofddijk of the Universiteit van Utrecht, especially to Dr. Mark Dekkers and Mr. Tom Mullender, for giving me the opportunity to work in the Walhalla of magnetic research and for their help and discussions, which gave a new dimension to this PhD research.

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² RAAP Archaeological Consultancy; present position at Vestigia, Archeologie en Cultuurhistorie, Amersfoort.

In the University of Bradford I would like to thank Gerry McDonnell and Stuart Fox for supervising and assisting in the heating experiment which I carried out in their laboratory facilities. At the Faculty of Earth Sciences of the VU University Amsterdam I would like to thank Martin Konert for giving me access to the sediment laboratory.

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The magnetometer which I used in the first year of this study was borrowed from RAAP Archaeological Consultancy, for which I would like to thank the people that made this possible. I would like to thank David Wilbourn (DW Consulting) for allowing me to use his software Archeosurveyor, for the 24/7 technical support that he provided and for giving me a hand in the field.

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