

# Archaeological desk- and coring research, location De Overloper – De 7 Heuveltjes, municipality Middelburg

Walcherse Archeologische Dienst



## Colofon

*Archaeological desk- and coring research for the De Overloper – De 7 Heuveltjes (municipality of Middelburg)*

Walcherse Archeologische Rapporten 74  
WAD-Projectcode MIDD\_024\_002 PvA

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### Figures

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## Administrative data

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Type of research:	Desk study & eplorative coring research
Province:	Zeeland
Municipality:	Middelburg
Place:	Middelburg
Toponym:	De Overloper – De 7 Heuveltjes
Centrumcoördinates research area:	X: 32571 / Y: 390673
Execution fieldwork:	February 26, 2024
MP number:	MIDD_024_002 PVA
Total surface target area:	ca. 4000 m <sup>2</sup>
Total surface research area:	ca. 4000 m <sup>2</sup>
Cadastral data:	MDB01 O 5108
Map:	65D
Archis prior research:	n.a.
Archis Case number:	5509412100
Client:	Gemeente Middelburg Contact J. Padmos Section Leefomgeving Postbus 6000 4330 LA Middelburg Tel.: 0118-675000
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# Summary

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De gemeente Middelburg wil de locatie De Overloper – De 7 Heuveltjes ontwikkelen. Het doel is om van de kavel een woonvoorziening te maken. Deze ontwikkeling vormt mogelijk een bedreiging voor eventueel in de ondergrond aanwezige archeologische waarden. Volgens het Walchers archeologiebeleid en de Rijkswetgeving moet de ontwikkeling daarom worden voorafgegaan door een verkennend archeologisch onderzoek. Om het ontwikkelingsproces op gang te brengen heeft de gemeente de Walcherse Archeologische Dienst opdracht gegeven om een verkennend archeologisch onderzoek uit te voeren om kenmerken van het plangebied te onderzoeken en eventuele archeologische waarden in kaart te brengen die mogelijk een risico kunnen vormen voor de planontwikkeling. Dit rapport is het resultaat van zo'n verkennend bureauonderzoek en kernonderzoek.

Het doel van het onderzoek is het beoordelen, documenteren en evalueren van de toewijzingslocatie door middel van een bureauonderzoek en een verkennend booronderzoek. Op basis van de resultaten wordt een adviesplan opgesteld om te beslissen of er verder archeologisch onderzoek op de site moet worden uitgevoerd.

De vraagstelling van dit onderzoek is concreet erop gericht om vast te stellen of de stratigrafie van de site intact is en of deze aansluit bij het verwachtingsmodel dat naar aanleiding van het bureauonderzoek is opgesteld. Verder wordt nagegaan of binnen de intacte stratigrafische bodemlagen een archeologische vindplaats te verwachten is.

Het bureauonderzoek heeft geresulteerd in een verwachtingsmodel dat er als volgt uitziet:

- Op basis van een studie van bodem- en geologische kaarten is in de bodem onder de De Overloper – De 7 Heuveltjes hoogstwaarschijnlijk een veenlaag behorende bij het Hollandveen Laagpakket aanwezig. Deze veenlaag was de oppervlakte tijdens de ijzertijd en de Romeinse tijd, en bevat dus mogelijk archeologische resten uit die tijd. Bennema & Van der Meer geven in hun betrouwbare bodemkaart van 1952 met een arcering aan dat binen het onderzoeksgebied het veen is gemoerneerd. Dat wil zeggen dat het veen is weg gegraven in de middeleeuwen en de eeuwen daarna ten behoeve van zoutwinning. De kans was daarom klein dat ter plaatse nog archeologische resten uit de ijzertijd en de Romeinse tijd aanwezig (zouden) zijn.

- Op basis van een studie van historische kaarten en archieven uit Archis3 kunnen we concluderen dat het gebied vanaf de middeleeuwen grotendeels voor landbouwdoeleinden werd gebruikt. Op kaarten van 1650 tot 1959 is te zien dat de grond als landbouwgrond werd gebruikt. Op de luchtfoto uit 1970 is te zien dat het een klein park werd omringd door huizen.

In lijn met de resultaten van het bureauonderzoek en het verwachtingsmodel kunnen we concluderen dat de kans op het vinden van archeologie uit de middeleeuwen en de postmiddeleeuwen zeer klein is.

In tegenstelling tot het verwachtingsmodel toonde het booronderzoek een intacte Hollandse veenlaag aan, waardoor er een matige kans is op archeologische vondsten uit de ijzertijd en de Romeinse tijd.

Het advies is dan ook vervolgonderzoek door proefsleuven te graven. De focus van deze proefsleuven ligt op archeologische resten op de top van het veen.

Dit rapport is opgesteld in Engels. Het onderzoek vormde onderdeel van een stageproject uitgevoerd door stagestudenten Kasia Turner uit Canada and Rainan Lindley uit de Verenigde Staten. Beiden studeren aan de University College Roosevelt te Middelburg.

# 1. Introduction

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## 1.1 Description of the research assignment

This research has been conducted for the site-allocation plan of the municipality Middelburg, concerning the location De Overloper – De 7 Heuveltjes, Middelburg. At the location new housing is planned to be built. The site is being used as a small park at the time of this research.

The construction that will be conducted for the transformation at the location is a potential threat to archaeological finds. According to national legislation, the Walchere Archeological Policy Plan and the municipal allocation plan, an inventory archaeological inquiry needs to be done prior to the start of the development project. It will provide insight into a possible archaeological assemblage that can be found at the site that can influence the development plan as outlined by the municipality of Middelburg. The WAD has done exploratory research, consisting of a desk study and a coring-research in line with both the Kwaliteitsnorm voor Nederlandse Archeologie, or the KNA (Quality Norm for Dutch Archaeology) and local provincial guidelines as outlined in 1.2. For the research, the WAD has formulated a Methodology Plan (MID\_024\_002 PVA), in which research problem, goal, research question and proposed method are included.

For the MP (Methodology Plan) the WAD has conducted a desk study, of which the results are discussed in sections 2 and 3.

There are some preliminary conclusions based on a survey of the cartography and geological maps that are available for the site:

-The location of the location De Overloper – De 7 Heuveltjes is located in an old low 'poel' area according to a very reliable and detailed map by Bennema & Van der Meer of 1959. This infers that in the lower soil strata, there is expected to be a peat-stratum. The top of this peat layer was the ground level during the Iron Age and Roman times and therefore indicates possible archaeology from these periods.

- However, the historical research also shows that these peatlands have a history of being excavated on a large scale in Medieval times to produce salt, which could have posed a threat to archaeology. Therefore, the expectancy for possible archaeological finds from the Iron or Roman time is limited.

## 1.2 Active laws and policies

The current archaeological research is necessary to comply with the Erfgoedwet accepted in 2016 (Heritage Law). This law is in transition to become the Omgevingswet, which was accepted by the government in 2015-2016. The law states that the municipality oversees archaeology in their allocation plans. The municipalities of Walcheren have therefore established an archaeology policy. An inventory was made based on the archaeological values and expectations which was then translated into the Archeologische Waarden- en Verwachtingskaart Walcheren 2016 (Archeological Value and Expectation Map). The target area for the current research is located on this map and indicates a middle-high expectancy for archaeology. Archaeological research was thus deemed necessary. For the conduction of the inventory coring and desk research the additional Provincial guidelines of 2019 are also applicable.

## 1.3 Location of the research area

The research location, the location De Overloper – De 7 Heuveltjes, is situated just outside of the city center of Middelburg in the district Dauwendaele. The research area can be found on the crossroads between De Overloper and Vrijlandstraat.

## 1.4 Current and projected use of the project area

The project area is currently being used as a small park behind houses. The projected use of the project area is to be turned to housing facilities. In line with the current expectations of the increase in houses to be constructed throughout the province.

## 1.5 Goal of the research

The municipality of Middelburg wants to develop the location De Overloper – De 7 Heuveltjes. The aim is to turn the lot into a housing facilities. To initiate the development process, an exploratory archaeological research has been ordered to establish all characteristics of the site and to chart possible risks.

The purpose of the research is to assess, document and evaluate the allocation site through desk research and exploratory coring research. Based on the results, an advice plan will be drawn up to decide whether to conduct further archaeological research at the site. The purpose of this research is to establish specifically whether the stratigraphy of the site is intact and

whether it aligns with the expectation model drawn up following the desk study. Furthermore, it aims to establish whether within the intact stratigraphical soil layers an archaeological assemblage may be expected.

### 1.6 Research problems and questions

- *What are the archaeological expectations based on a study of geological, geomorphological and soil maps?*
- *What are the archaeological expectations based on a study of historical maps?*
- *What are the expectations for possible disturbances based on a historical study of the area?*
- *Is it possible to format a proper stratigraphy, based on coring research and what is the nature of this section?*
- *In case of an intact soil section, can we expect archaeological assemblage? What can be said about the time period specifications of these findings?*
- *Has the coring already revealed archaeological finds?; Is it possible to make inferences about the nature, dating and level of conservation of these finds?*

### 1.7 Questions concerning value assessment & proceedings

- *What is the value assessment of the findings (in accordance with KNA)?*
- *What is the advice for subsequent research?*

### 1.8 Methodology

Following the research assignment, the WAD has conducted a desk study (chapters 2&3). The goal is to establish a model of expectations, which is thereafter tested by means of a coring.

For this, the WAD has drawn up a methodology plan (MP) in which the research problem, goal of the study, research question and proposed method has been listed. Successively, the coring research has been performed by B. Meijlink, B. Silkens, M.K. Turner & R. Lindley.

The findings of the exploratory field research by means of coring are listed in the appendix and are discussed in chapter 4.

The results, conclusions and answers to the research questions have been listed in the concluding chapters.

### 1.9 References (Addresses, historical & geological maps)

#### Addresses

- ARCHIS (AMK, IKAW, omg en wng)
- Kaart Cultuurhistorie Zeeland (Provincie Zeeland) (historische kaarten, luchtfoto's)
- Google Earth
- Luchtfotografische documentatie 1974 (Erfgoed Zeeland)
- Zeeuws Archief (historische kaarten, foto's, bouwtekeningen, kadastrale minuut)
- Zeeuwse Bibliotheek (fotobank)
- Zeeuws Archeologisch Archief
- Actueel Hoogtebestand Nederland (AHN) <https://www.zeeuwsbodenvenster.nl>
- [www.dinoloket.nl](http://www.dinoloket.nl)
- [www.bodemloket.nl](http://www.bodemloket.nl)

#### Old maps

- Visscher-Romankaart (1650)
- Topografische Kaart van de Hattinga's (1750)
- De Man Vliedbergen (1888)
- Bonneblad (1925)
- Aerial map (1959)
- Aerial map (1970)

#### Geological and soil maps

- Rijks Geologische Dienst (RGD). Geologische kaart van Nederland 1:50.000, Blad Walcheren, Haarlem: 1972, Tweede druk 1997.
- RGD. Paleogeografische kaarten van Zeeland, Holoceen, 1:500000, Haarlem: 1996.
- RGD. Geologische kaarten van Zeeland, Holoceen, 1:250000, Haarlem: 1996.
- Bennema, Ir. J. en Dr. Ir. K. van der Meer. De Bodemkartering van Nederland, deel XII, De Bodemkartering van Walcheren. Ministerie van Landbouw, Visserij en Voedselvoorziening, Directie van de Landbouw, Stichting voor Bodemkartering, 's-Gravenhage: 1952

*Main literature:* see literature list in the back.

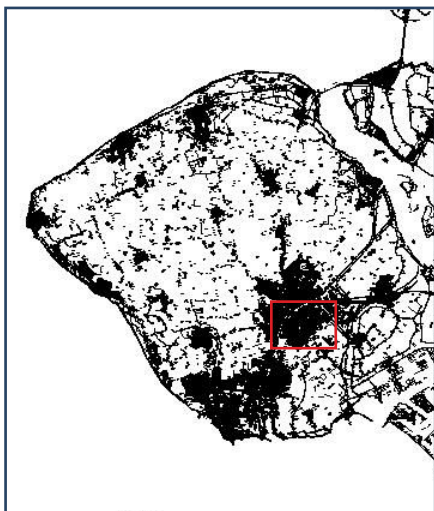
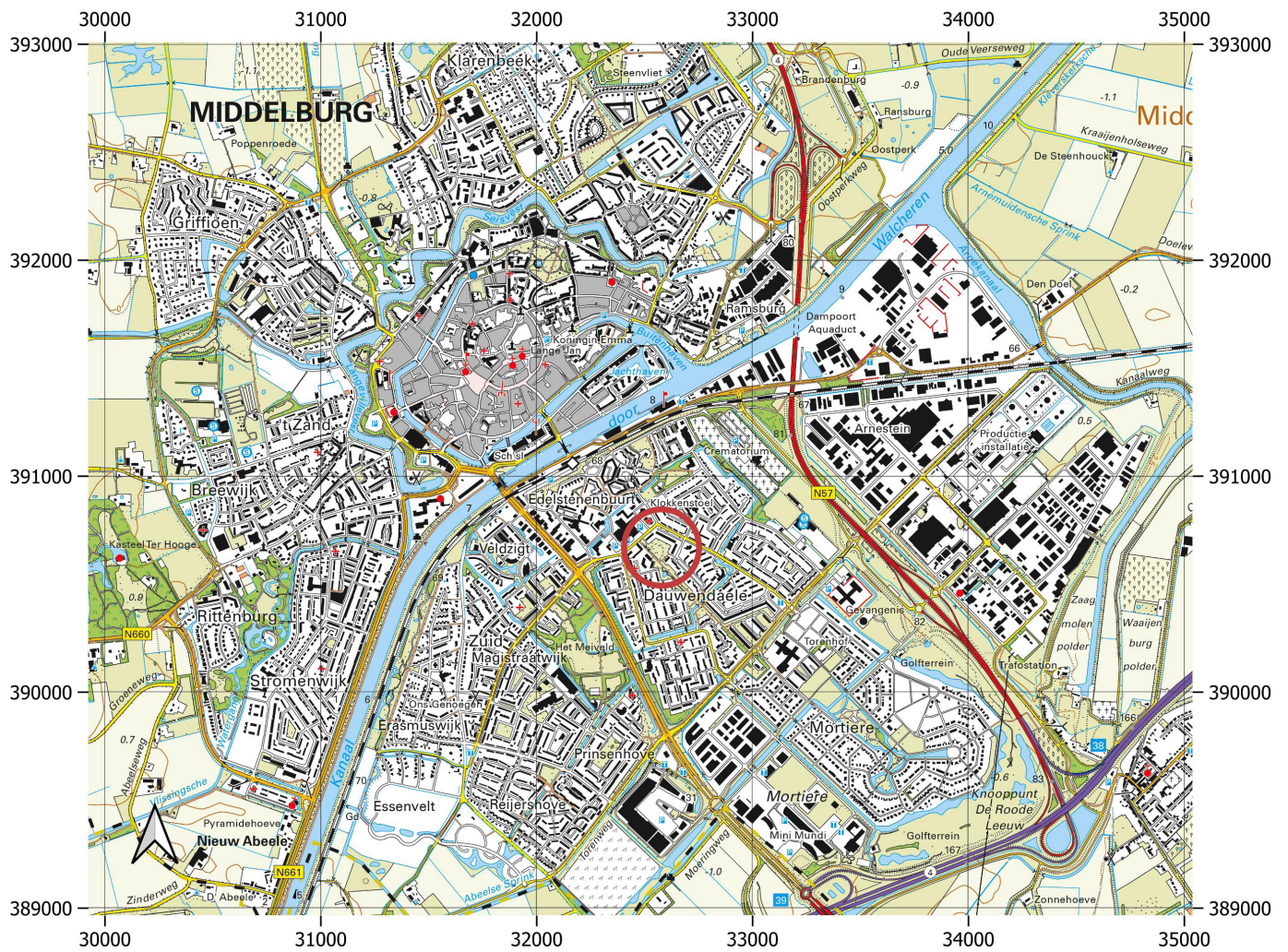


Fig. 1 Location of the research area indicated with red circle and polygon on topographical map and aerial photo.

## 2. Geology and soil

The stratigraphy of Walcheren is characterized by four recognizable layers coinciding with periods of sedimentation. There is Pleistocene, a period of alternating warmer and cooler periods, more than 11 Kya ago. During this era, Zeeland was covered in a thick layer of sand, which is visible in the soil profile. Following the Pleistocene is the Holocene era, characterized by a warmer period, in which the North Sea expanded in volume and the sea level rose.

About 4000 years later, the sea-level rise came to a halt and in Zeeland a tidal region started to form. Between 5000 and 2000 BC salt marshes and mud flats started to form in the tidal region. Sediments belonging to this period are called Wormer Member. Then, around 2000 BC, the coastlines closed up due to natural formation of dunes, causing the formation of peat swamp under influence of the saltwater hinterlands. Eventually, the area started to silt up and around 3500 years ago (1500 BC), Zeeland was covered under a firm and thick layer of peat, called the Hollandveen Member.

Around 400 BC the coastline reopens, causing the peat to drain. The peat stratum then becomes sedimentary and habitable. Thus, from circa 400 onwards, settlements returned to the region of Zeeland.

The Romans came upon the area of Holland about 2000 years ago and settled down on this new soil (14 BC). During this time, the sea level rose, which, in combination with the intense irrigation the Roman settlers conducted with the peat lands caused the landscape to change. The settled peat started to occupy a lower position in the landscape and instigated a lowering of the ground level of the peat. From ca. 275 CE onward the settling of the peat in combination with

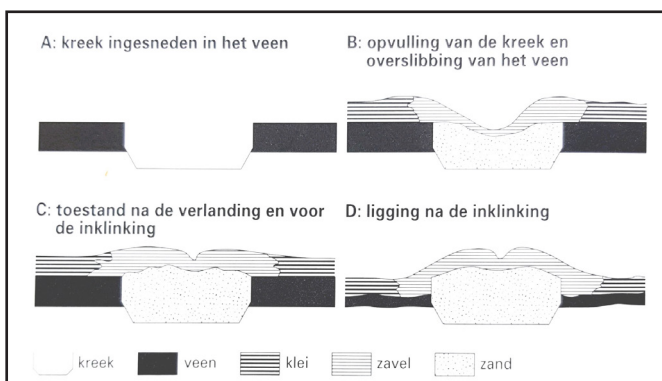


Fig. 2 Formation of a creek ridge.  
From Berendsen 1997 after Bennema & Van der Meer 1952.

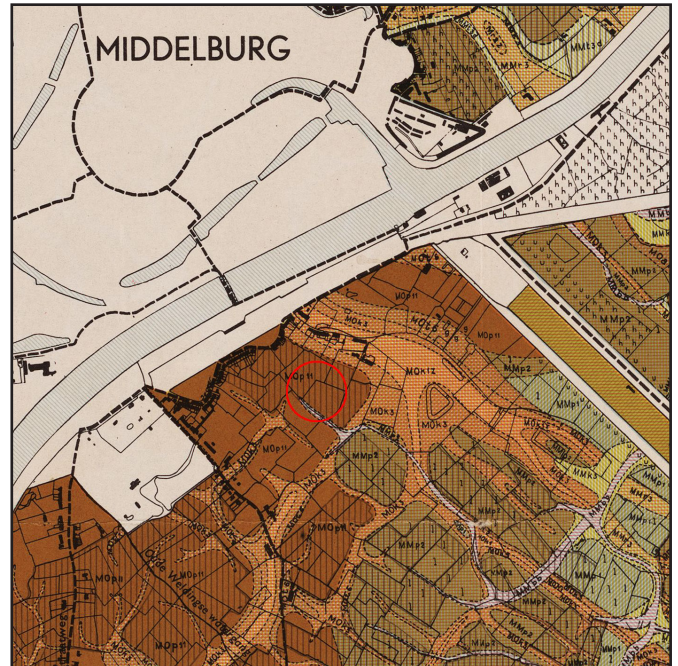


Fig. 3 Soil map by Bennema & Van der Meer 1952; research area in red circle. Light brown colours mark sandy creek deposits; dark brown colours mark the clay 'poel' grounds. The hatching on the map suggests that the peat has been dug away in medieval time.

the rising of the sea level led to frequent flooding. In between creek ridges with sandy deposits, the area was occasionally being flooded, causing more clay-like sedimentation. Eventually, Zeeland area became uninhabitable and over the course of several hundred years, a height difference in the landscape became visible. The land alternated between areas of clay soil with peat underneath and areas with sand soil from the former creeks. (fig. 2 and 3) The landscape of Walcheren characterizes itself by the alternation of lower and higher areas. These lower areas are called the 'poel' areas, surrounded by the inversion ridges, which are higher. The lower located poel areas were too wet for settlements, so they were used for pasture. Nearly no medieval settlements can be found on these areas. The dryer land on the tidal ridges was occupied by settlements.

These higher creek banks were the places where people settled down. It was also the location of agricultural practice. The medieval time caused much damage to the peat stratum, because it was being dug in in large quantities and burned to produce saline. But, because the peat in some of these poel areas has not been damaged manually or naturally, there is a possibility of the presence of archaeology.

Kaart	Code	Omschrijving
<b>Pleistoceen</b>		4 - 6 m -NAP
<b>Bodemkaart NL</b>		not mapped
<b>Geologische kaart 1972</b>	AO.2	Dunkirk 2 deposits on Holland peat, overlying Calais deposits
<b>Bennema &amp; vd Meer 1952</b>	MMp2	young poel-soil with a slightly calcareous poel-soil
<b>Geomorphological map 1986</b>		not mapped

The target area for the current research at the Overloper is in the corner of a tidal ridge, surrounded by narrow side arms. According to the soil map of Bennema and van der Meer 1952, it contains young poel-soil with a slightly calcareous poel-soil (MMp2) (fig 3) The soil likely consists of clay-like upper layers as described above, with a layer of peat underneath. What is probable, is that the soil will not contain early medieval archaeology. These settlements were located on the creek banks, rather than beside it in the poel area, as to be safe from the water running through the tidal channels. Because the soil contains a layer of peat underneath, there is a possibility of archaeology from the Iron Age & Roman time, whom, during their settlement in Zeeland, practiced agriculture and built small settlements. The archeological traces can be found in the upper layer of the Hollandveen. In addition there is a large possibility that this peat has been dug away in medieval times, as indicated by hatching in the soil map.

However according to coring B48B0536 reported on the site [www.dinoloket.nl](http://www.dinoloket.nl) there is still a layer of peat present in the research area. This may be a small area between medieval extraction pits. The same coring also tells us that in the center of our research area between 4.5 and 5.5 meters below surface there is basic peat on top of Pleistocene sand. The top of the basic peat and the Pleistocene sands dates back to the Neolithic period.

### 3. Overview of the known data (desk study)

#### 3.1 Research history

The target area has not been investigated on an archaeological basis prior to the current research.

#### 3.2 Documented archaeological data

##### *Walcherse Archeologische Verwachtings- en Waardenkaart en de Beleidsadvieskaart*

These maps are made based upon, amongst others, the very detailed soil map of Bennema en Van der Meer and various old maps combined with archaeological data from Archis3. The plan area on these maps is within a zone that is indicated as a zone with a high / medium high archaeological expectation. Here applies the rule that soil interventions deeper than 40 cm and with a surface size larger than 500 m<sup>2</sup> need to be preceded by archaeological research.

At the parcel just across the Overloper, there is documentation of archaeological research by means of a desk study, according to the Archis3 service (case number 2119165100). However, there have not been any significant finds. The lot is indicated as an area that has an agricultural background that does not have a history of construction.

The ZAD (Zeeland Archaeological Depot) has no extra information on our research area. (Confirmed by mail may 3th 2024.)

#### 3.3 Known historical data

##### *Historische kaarten & luchtfoto's*

Based on the maps by Visscher-Roman from 1650, Hattinga from 1750, De Man Vliedbergen from 1888, Bonneblad from 1925, and the aerial photo from 1959, it becomes evident that the target location has not been used for settlements and had purely been agricultural land. Starting from the aerial photo from 1970 until present we can see that the location became a small park that has been surrounded by houses. (figs. 4-9

#### 3.4 Disruptions

In consulting bodemloket.nl we learned that an environmental desk study has been performed, to look if the land has been contaminated. The result show that there is no reason to believe that pollution is present at De Overloper – De 7 Heuveltjes and no soil remediation has occurred in the past.

The research area is called De Overloper – De 7 Heuveltjes, and there are eight small hills of raised land, these therefore showing that some of the soil has been relocated onsite. As there are also some ditches present on location. This mean that a part of the upper sediment (Walcheren Member) has been disturbed.

The Royal Airforce Aerial photographs of World War Two have been consulted and we cannot see any bomb craters or other disturbances that the war may have caused.

Map/aerial photo	Period	Indicator	Remarks
Visscher-Roman	1650	no	pasture
Hattinga	1750	no	pasture
Kadasterkaart	1832	no	pasture
De Man Vliedbergen	1888	no	pasture
Bonnebladen	1910	no	pasture
Luchtfoto	1959	no	pasture
Luchtfoto	1974	no	small park between houses
Luchtfoto	today	no	small park between houses



Fig. 4 Cut-out of map Visser-Roman 1650-1670



Fig. 5 Cut-out of map Hattinga 1750

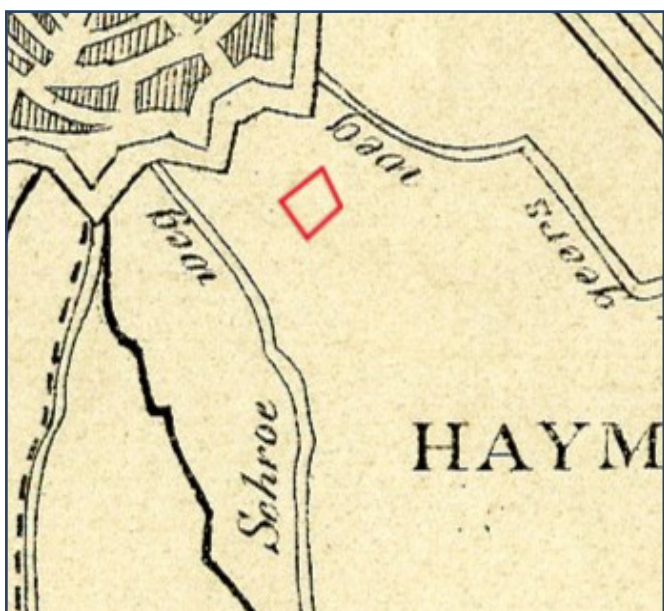


Fig. 6 Cut-out of map De Man 1888

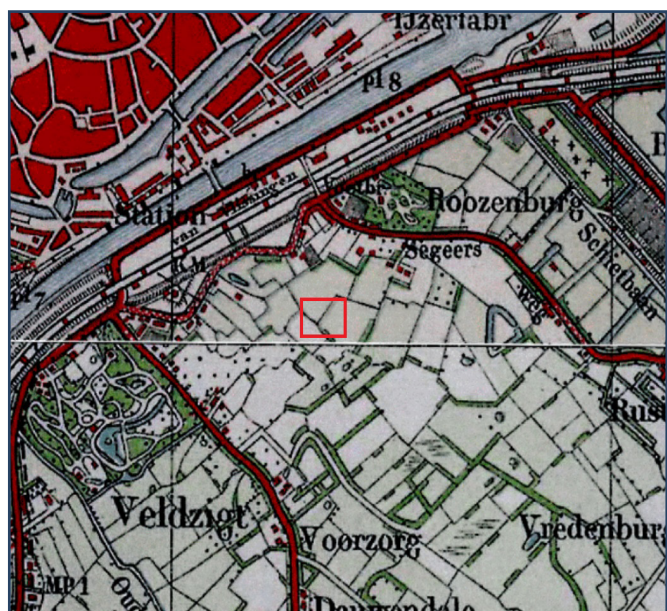


Fig. 7 Cut-out of map Bonnebald 1925



Fig. 8 Aerial photo 1959 (from CHKZ)



Fig. 9 Aerial photo 1970 (from CHKZ)

### 3.5 Specified model of expectations

Based on the afore-mentioned results from the desk study for the De Overloper – De 7 Heuveltjes in Middelburg, the following model of expectations has been drawn up based on our questions:

*What are the archaeological expectations based on a study of geological, geomorphological and soil maps?*

- Based on a study of soil and geological maps, the subsoil underneath the De Overloper – De 7 Heuveltjes contains most likely a peat layer belonging to the Hollandveen Member. The top of this peat layer was the ground level during the Iron Age and the Roman era, and thus may contain archaeological evidence from that time. Several sites from these times are known in the environment. Bennema & Van der Meer indicate in their soil map that the peat layer has most likely been extracted in medieval times in order to produce salt. Therefore, the expectation that the peat is largely intact is small. A coring report (B48B0536) found at dinoloke.nl informs us that intact peat is still present at part of the research area. (Fig. 12)

- Additionally, since the medieval settlements were located on the higher ridges, there is little indication that archaeology from this period can be found, because the location is between ridges. . Therefore, we have a low expectation of finding archaeology from

the above mentioned periods.

- According to the same coring consulted in [www.dinoloket.nl](http://www.dinoloket.nl) between 5.5-4.5 m below surface intact basic peat is present. In the top of the basic peat one could expect archaeological finds from neolithic period, however since the peat is a remnant of marsh landscape not much habitation will have taken place in this area. Therefore we think the exception of archaeological on this level is low.

*What are the archaeological expectations based on a study of historical maps?*

- Based on a study of historical maps and records from Archis3, we can infer that the area was largely used for agricultural purposes from the Middle Ages onward. Maps from 1650 till the 1959 show that the land was use as agricultural land. The aerial photo from 1970 shows that it became a small park surrounded by houses.

*What are the expectations for possible disturbances based on a historical study of the area?*

- The top of the deposits of the Walcheren Member will have been disturbed considerably in recent times, caused by the relocating of soil in order to create wadis and small hills. This soil intervention can clearly be discerned in the level map AHN. (fig. 10) Except for the relocating of soil on the top layer no disturbances have been found.

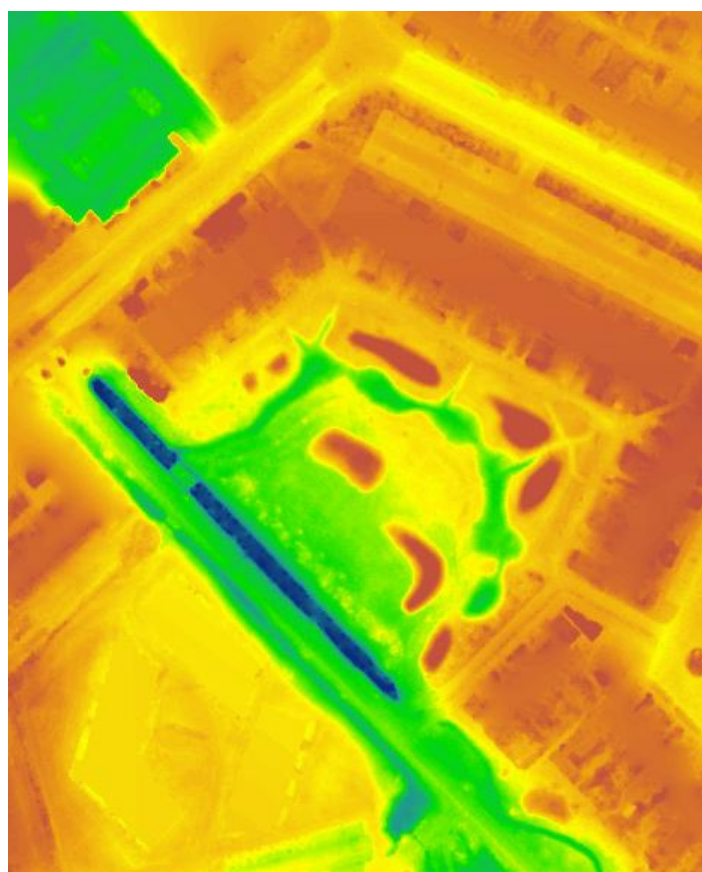


Fig. 10 Cut out from AHN 4 (from [www.AHN.nl](http://www.AHN.nl))

### 3.6 Conclusions and advice

Concludingly, the area has a low expectancy for archaeology. But, because there is a possibility the peat is intact, an exploratory coring investigation is necessary to confirm the condition of the peat. For an area of this surface-size, the advice is to place five coring spots (illustrated by figure 1 and 11).

## 4. Results archaeological field research

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### 4.1 Introduction and method

Five corings were planned on the research location to test the model of expectation (fig. 11 with coring spots). The coring spots were set out by sight; looking for the best location within the area with small hills and slopes. As such these spots were taken up into the methodology plan. Each corings location was measured by the GPS.

All coring was first done with an Edelman-auger of 7 cm diameter up to a depth of about 0.8 meters below the surface. The exploratory coring proceeded with a gauge auger of 3 cm diameter. All corings were placed up to the Wormer Member at about 2.9 meter below the surface.

The field team consisted of B. Silkens, B. Meijlink, R. Lindley (UCR), and M.K. Turner (UCR). The description of the stratigraphy was done by B. Meijlink, and B. Silkens.

In Appendix 1 the detailed descriptions of the corings can be consulted.

### 4.2 Stratigraphy

The surface of the coring is between -0.21 m NAP & -0.59 m -NAP. The description below gives the results from the bottom-up to ground level, so earliest time-period first:

#### *Basic Peat and Pleistocene sand*

Not reached during the fieldwork.

#### *Wormer Member (Calais Deposits)*

In corings number 1-5 the Wormer Member was reached with the gauge auger, respectively at a depth of 2.45 -3.20 -NAP meter. The deposit is a soft clay that is gray blue in color. It has a strong silt component. The Wormer clay was found relatively clean. The clay contained some remnants of reed.

#### *Hollandveen Member*

In corings 1-4 a thick layer of peat was present. In corings 1,2, and 4 this layer appeared to be intact, containing in the top black oxidized peat. In coring 3 this top seems to be eroded. The thickness of the peat layer varied from 74-112 cm. The top of the peat layer was reached between 1.71-2.08 m -NAP. The peat was

slightly amorphous, mostly from moss and the lower parts it was from reeds.

In coring 5 peat wasn't present, with the coring location also being the site of a peat extraction pit. The filling of the peat extraction pit contained small particles of broken brick, next to small lumps of peat and clay.

#### *Walcheren Member (Dunkirk Deposits)*

In coring 1 the Walcheren Member deposits consisted of moderate silty clay. Its top laid at 1.01 m -NAP, and was covered by a old top soil. This top soil contained small amounts of shell, brick, and charcoal. This old top soil was 30cm thick, its top laid at 0.71 m - NAP.

In coring 2 the Walcheren Member deposit contained of moderate silty sand, with traces iron (Fe). Its top laid at 1.46 m -NAP.

In coring 3 the Walcheren Member deposit consisted of moderate silty clay, with traces of iron (Fe). Its top lays at 1.61 m -NAP. The layer was quite thin (47cm) indicating erosion or anthropogenical soil intervention.

In coring 4 the Walcheren Member deposit showed a thin layer (12cm) of sand at the bottom. It was covered by a thicker layer of moderate silty clay, and its top lays at 1.82m -NAP. One might suspect a creek bank deposit.

In coring 5 the entire Walcheren Member deposit was replaced by the filling of a peat extraction pit.

#### *Topsoil*

All corings show that the research area was raised with a package of sand. The thickness of this package varies between 35 and 77 cm. The top forms the present day topsoil and contains plant materials. The thickness of the topsoil varied between 10 and 35 cm.

Only in coring 1, underneath the recent raising package, the former topsoil has been preserved. (see above).

### 4.3 Features and finds

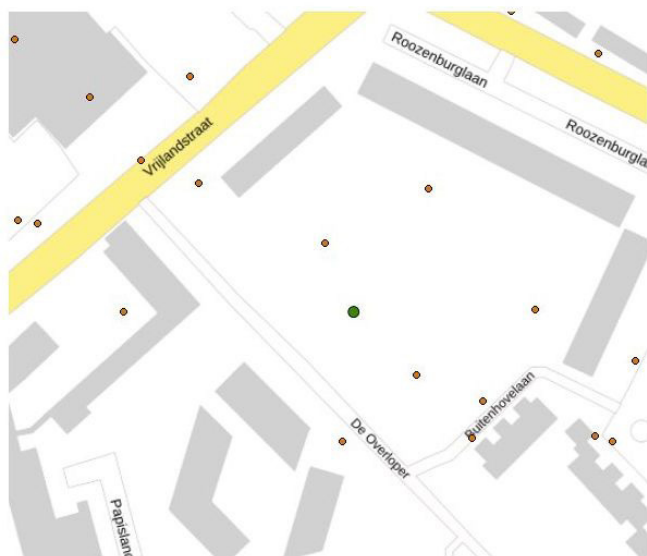
No archaeological find or features was found during the coring research.



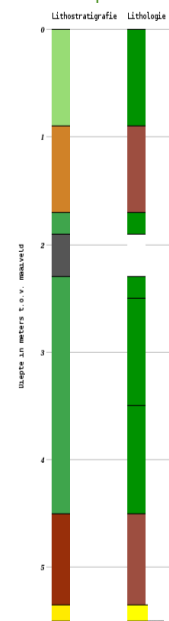
Fig. 11 Aerial photo with coring spots

### Geologisch booronderzoek

Identificatie B48B0536



### Boormonsterprofiel



Identificatie: B48B0536  
 Coördinaten: 32550, 390660 (RD)  
 Meetveld: 0.00 m t.o.v. NAP  
 Beschikbare informatie: Digitale opnamegegevens  
 Beschrijfmethode: Onbekend  
 Kwaliteit interpretatie: Niet gevalideerd in ondergrondmodel

Lithostratigrafie	Lithologie
NANK	Klei
NICH	Zand fijne categorie
NAMQ	Yeen
NEN	Yeen
NIEA	Geen monster
BX	Geen monster

Fig. 12 Coring B48B0536 from Dinoloket

## 5. Conclusions and advice

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### 5.1 Introduction and expectation model

As mentioned in the introduction and the already established methodology plan, this research has been conducted in line with the development plans for the target area de Overloper in Middelburg. The location of the target area is illustrated in figure 1.

According to the Walcherse Archaeological Policy and National legislation, the development of the allocation plan of this kind needs to be preceded by an exploratory archaeological study. This report is the result of such exploratory desk study and coring research.

The desk study resulted in an expectation model that is as follows: Based on a study of soil and geological maps, the soil underneath the De Overloper – De 7 Heuveltjes contains most likely a peat layer belonging to the Hollandveen Member. The top of this peat layer was the ground level during the Iron Age and the Roman era, and thus may contain archaeological evidence from that time. Several sites from these times are known in the environment. Bennema & Van der Meer indicate in their soil map that the peat layer has most likely been extracted in medieval times in order to produce salt. Therefore, the expectation that the peat is largely intact is small.

Based on a study of historical maps and records from Archis3, we can infer that the area was largely used for agricultural purposes from the Middle Ages onward. Maps from 1650 till the 1959 show that the land was used as agricultural land. The aerial photo from 1970 shows that it became a small park surrounded by houses.

### 5.2 Answers to the research questions

In the field we tested this expectation model, and found that opposed to the Bennema soil map, that the peat layer in most parts of the research area has not been extracted and is intact. In the northwest area of the research area coring 5 hit a peat extraction pit.

The research questions concerning the coring research can be answered as follows:

- *Is it possible to format a proper stratigraphy, based on coring research and what is the nature of this section?*

In coring 1-4 we have a normal stratigraphy consisting of deposits of the Walcheren Member on top of an (almost) intact layer of Holland Peat. The lying on top of deposits of the Wormer Member.

- *In case of an intact soil section, can we expect archaeological assemblage? What can be said about the time period specifications of these findings?*

The peat layer showed an oxidized top indicating the former surface is still present, in this top of this peat layer we therefore can expect archaeological remains from the iron age or roman era.

The top of the deposits of the Walcheren Member seems to be eroded or disturbed in corings 2-5, only in coring an old top soil is still present. In combination with the result of the desk study the expectation of archaeological remains in the top of the Walcheren Member is very low.

- *Has the coring already revealed archaeological finds?; Is it possible to make inferences about the nature, dating and level of conservation of these finds?*

No archaeological finds were found.

### 5.3 Value assessment and Advice

In line with the results of the desk study and the expectation model we can conclude that the chances of finding archaeology from Middle Ages and post-medieval times are very low. In contradiction to the expectation model, the coring research showed an intact Holland Peat layer therefore there is moderate chances of archaeological finds from the Iron Age and Roman era.

The advice therefore is follow up research by excavating test trenches. The focus of these test trenches is on archaeological remains on the top of the peat.

## Figure list

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Fig. 1 Location of the research area indicated with red circle and polygone on topographical map and aerial photo

Fig. 2 Formation of a creek ridge. From Berendsen 1997 after Bennema & Van der Meer 1952.

Fig. 3 Soil map by Bennema & Van der Meer 1952; research area in red circle. Light brown colours mark sandy creek deposits; dark brown colours mark the caly 'poel' grounds. The hatching on the map suggests that the peat has been dug away in medieval time.

Fig. 4 Cut-out of map Visser-Roman 1650-1670 (Zeeuws Archief)

Fig. 5 Cut-out of map Hattinga 1750 (Zeeuws Archief)

Fig. 6 Cut-out of map De Man vliedbergen 1888 (Zeeuws Archief)

Fig. 7 Cut-out of map Bonnebald 1925 (Zeeuws Archief)

Fig. 8 Cut-out of map aerial photo 1959 (source KCHZ)

Fig. 9 Cut-out of map aerial photo 1959 (source KCHZ)

Fig. 10 Cut out from AHN 4 (from [www.AHN.nl](http://www.AHN.nl))

Fig. 11 Aerial photo with coring spots

Fig. 12 Coring B48B0536 from Dinoloket

# Literatuur

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Bennema J. & Van der Meer K., 1952, *De Bodemkartering van Nederland. Deel 12, Walcheren*. Wageningen, Stichting voor Bodemkartering.

Berendsen, H.J.A., 1997, *Landschappelijk Nederland*, Assen

Provinciaal Blad van Zeeland, nr. 8080, 2019. Besluit van gedeputeerde staten van Zeeland van 10 december 2019, kenmerk 19434306, houdende vaststelling regeling aanvullende richtlijnen voor archeologisch onderzoek in de provincie Zeeland 2019.

# Appendix



# Rapportage Archeologisch Booronderzoek

Project: De Overloper -De zeven heuveltjes

MIDD\_024\_003

Plaats: Middelburg

Gemeente: Middelburg

Opdrachtgever: Gemeente Middelburg

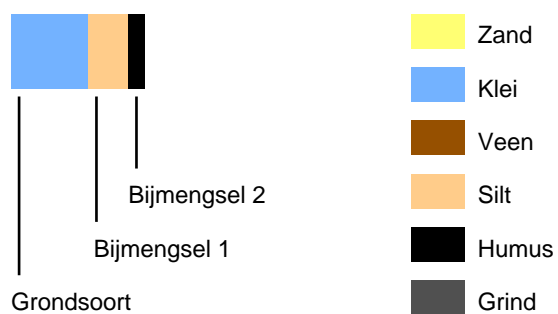
Kaartblad: 65D

OM-nummer: 5509412100

Bepaling Locatie: Dgps

Bepaling Maaiveldhoogte: Dgps

## Verklaring boorschema



# Boring: 1

Datum: 26-02-2024  
Maaiveld: Grasland

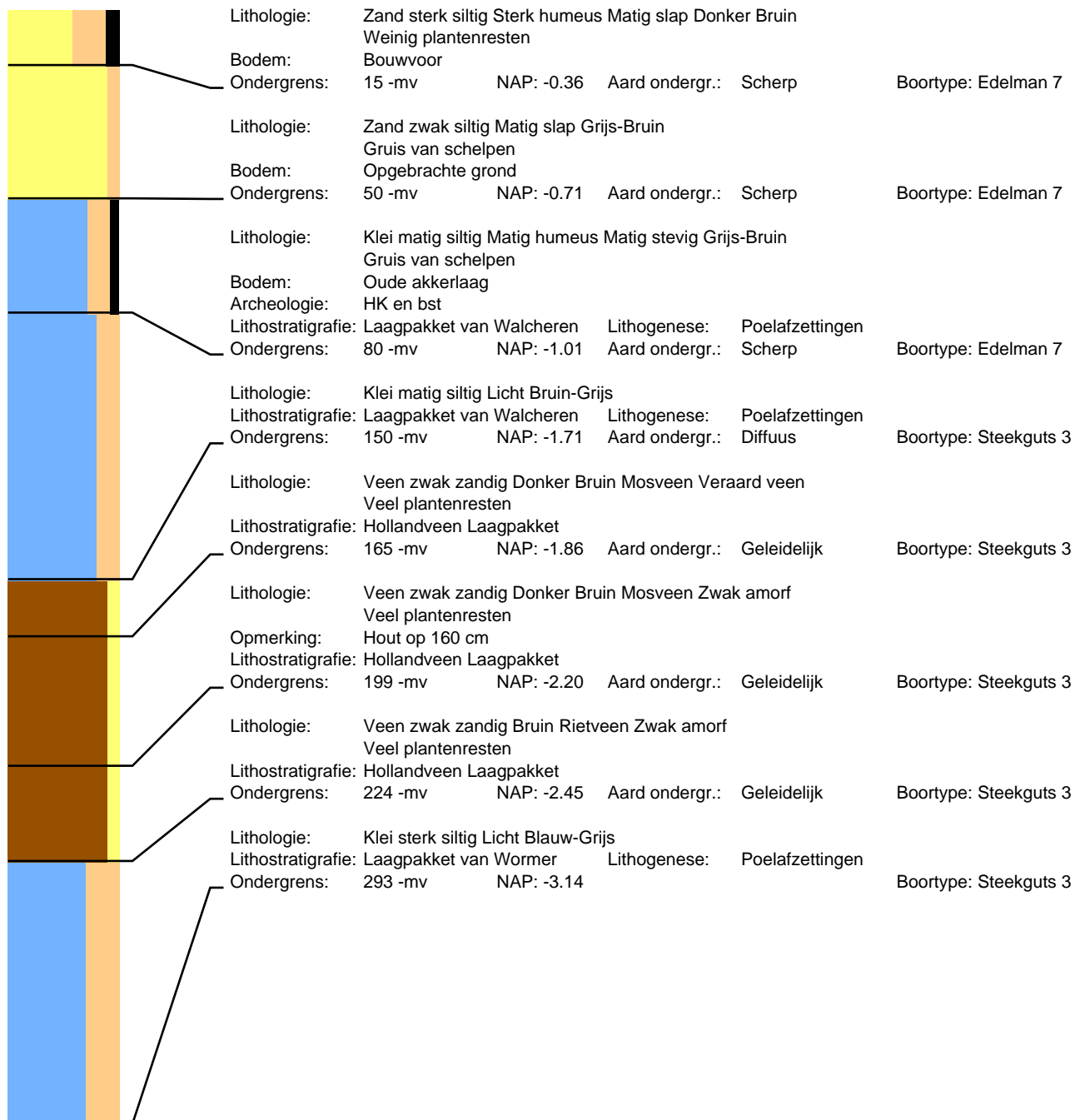
# Project: De Overloper -De zeven heuveltjes

Beschrijver: Bram Silkens

X: 32578.00

Y: 390654.00

Z: -0.21



## Boring: 2

Datum: 4-3-2024  
Maaiveld: Grasland

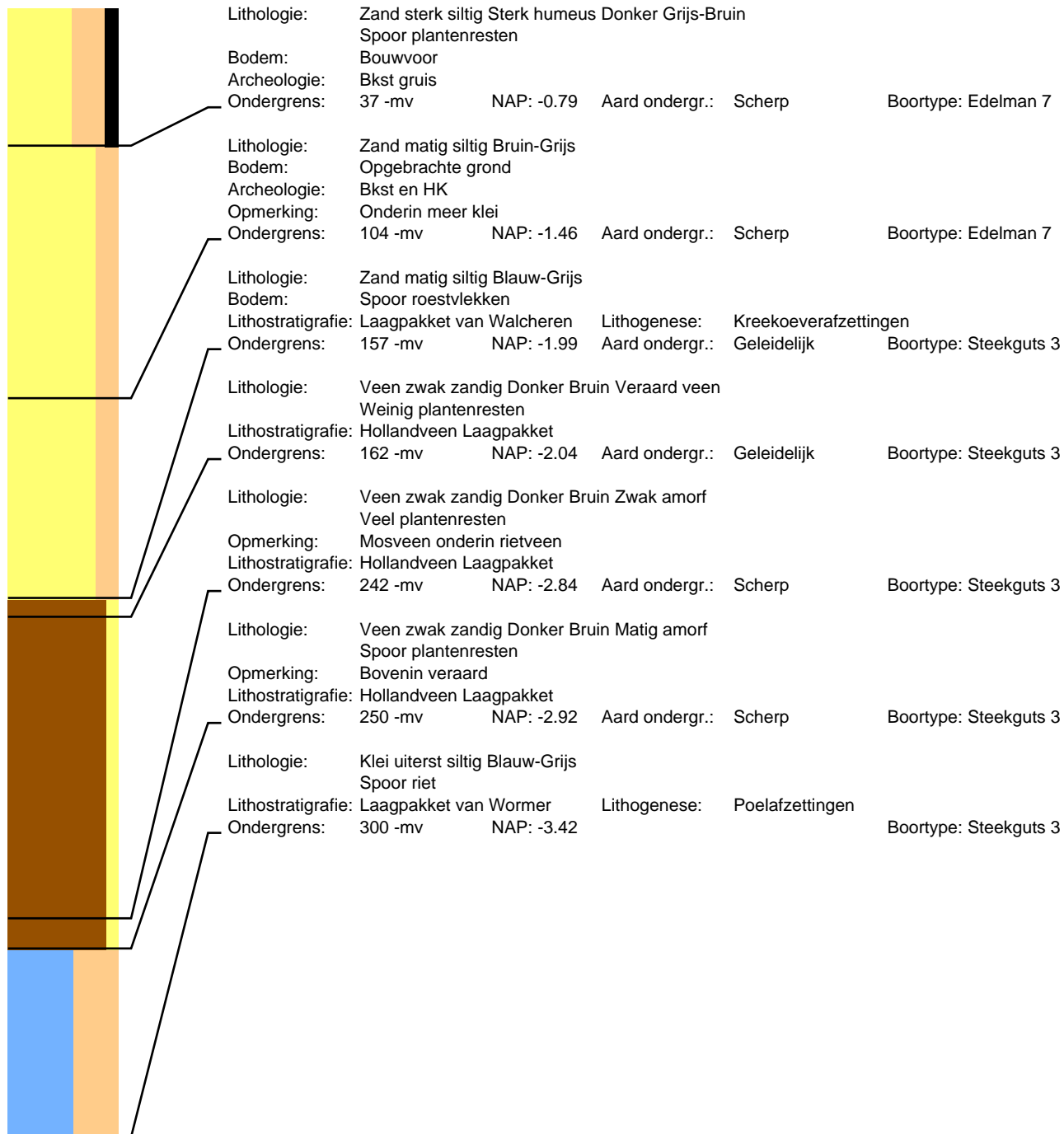
## Project: De Overloper -De zeven heuveltjes

Beschrijver: Bernard Meijlink

X: 32604.00

Y: 390671.00

Z: -0.42

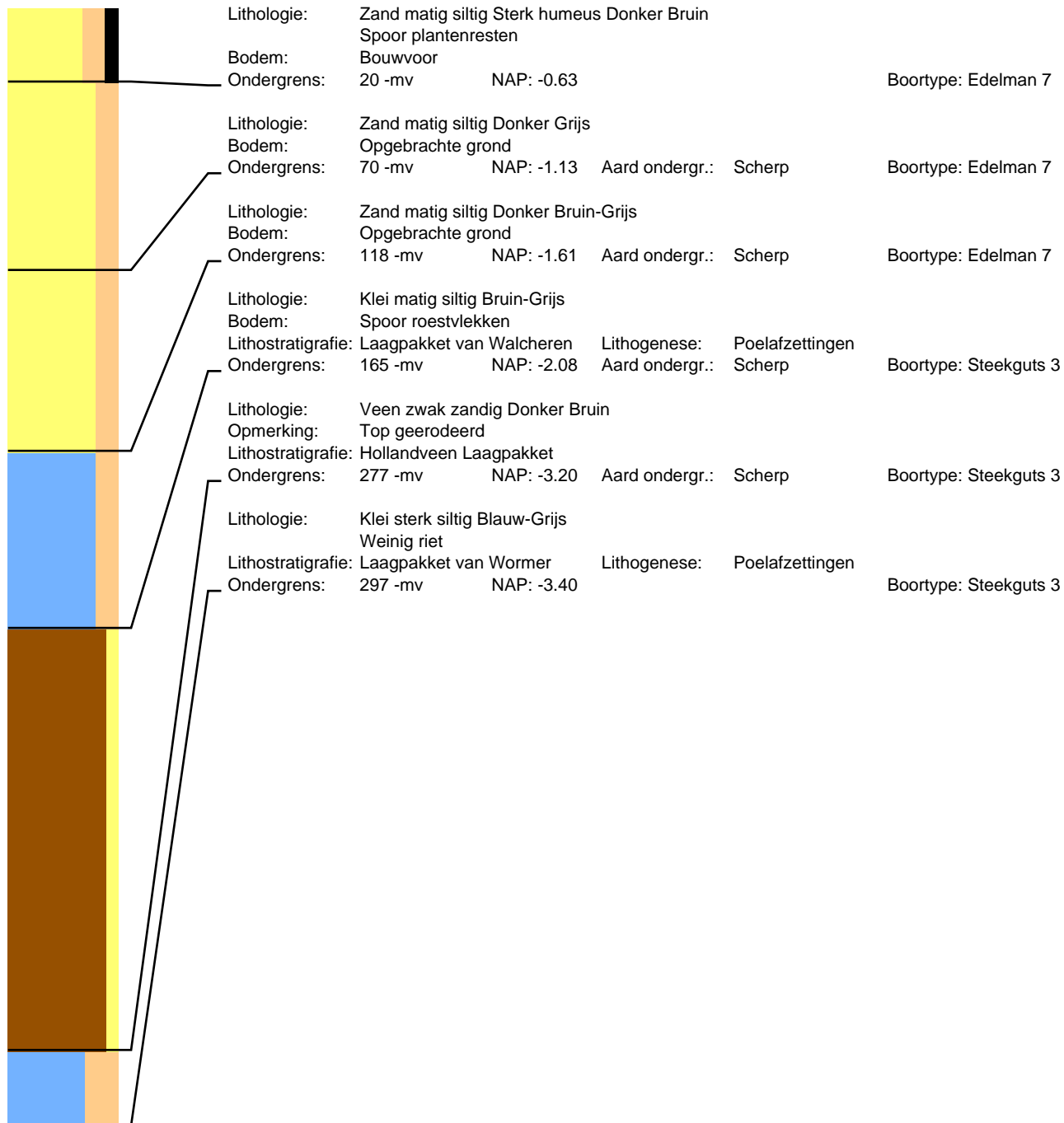


# Boring: 3

Datum: 4-3-2024  
Maaiveld: Grasland

# Project: De Overloper -De zeven heuveltjes

Beschrijver: Bernard Meijlink X: 32564.00 Y: 390678.00 Z: -0.43

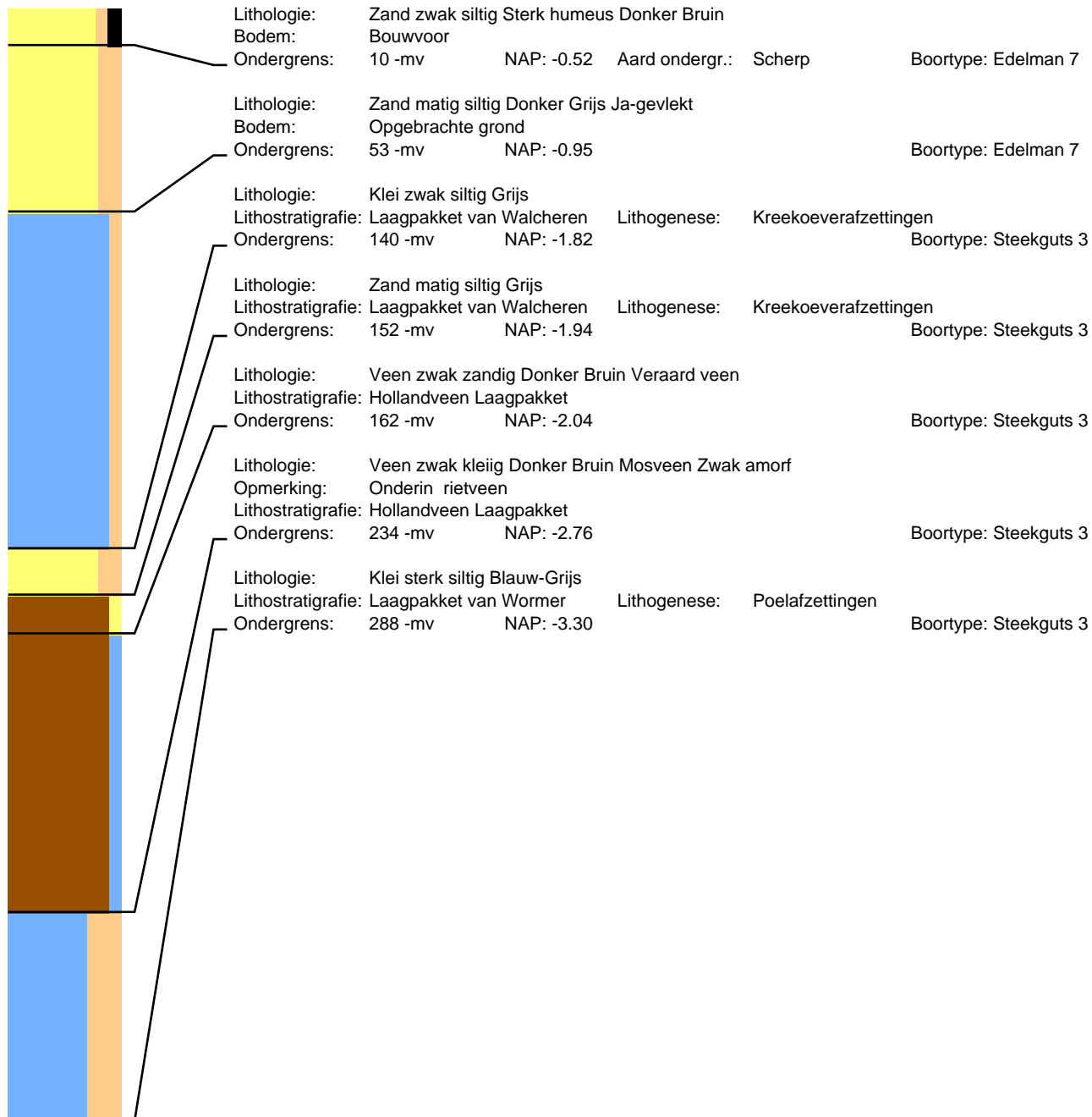


# Boring: 4

Datum: 4-3-2024  
Maaiveld: Grasland

# Project: De Overloper -De zeven heuveltjes

Beschrijver: Bernard Meijlink X: 32549.00 Y: 390699.00 Z: -0.42



# Boring: 5

Datum: 4-3-2024  
Maaiveld: Grasland

# Project: De Overloper -De zeven heuveltjes

Beschrijver: Bernard Meijlink X: 32530.00 Y: 390676.00 Z: -0.59

