An Archaeological Desk-Based Assessment for the Erosion Project on St. Eustatius, Caribbean Netherlands
An Archaeological Desk-Based Assessment for the Erosion Project on St. Eustatius, Caribbean Netherlands

SECAR archaeological report number 20200101

Date: January 31, 2020

Client
Rijkswaterstaat
Ministerie van Infrastructuur en Waterstaat
Organisatie Grote Projecten en Onderhoud
Grifioenlaan 2
3526 LA Utrecht
The Netherlands
Contact person:
Rob Kroon
rob.kroon@rws.nl
+31(0)6 15169277

Contractor
St. Eustatius Center for Archaeological Research
Road to English Quarter 42
St. Eustatius, Caribbean Netherlands
info@secar.org
+599 319 1631

Author
Fred van Keulen MA
Archaeologist
St. Eustatius Center for Archaeological Research
fredjevankeulen@gmail.com
+599 319 1631

Cover Figure: Watercolor drawing by Samuel Fahlberg dedicated to P.R. Cantz'laar (Source: Digital copy on file at SECAR).
Table of Contents
1. Introduction ........................................................................................................................................1
   1.1 The reason and objective of this research ..............................................................................1
   1.2 The research area .....................................................................................................................1
2. Landscape and Cultural-Historical Framework ...............................................................................4
   2.1 Geology and Geomorphology ..................................................................................................4
   2.2 Historical context ....................................................................................................................5
3. Archaeological Expectation and Advice .......................................................................................24
   3.1 Archaeological expectation ......................................................................................................24
Appendix 1 Archaeological Predictive Map St. Eustatius, Caribbean Netherlands ..................31
1. Introduction

The St. Eustatius Center for Archaeological Research was contracted to conduct an archaeological desk-based assessment of three color-coded areas. The colors are green, blue and yellow (Fig. 1). The plan for the roads of the green and blue areas is to renovate the roads and implement a drainage system to direct rainwater in a suitable manner. Furthermore, retention ponds will be constructed to catch water or to have it seep into the soil. In the yellow area along the coast the plan is to place large rocks along the coastline to stop the erosion, but possibly can also act as a breakwater.

According to the Monuments Law BES article 1: monuments can be movable and immovable property, which are at least 50 years old and that are perceived of general interest because of their beauty, artistic value, their meaning for science, the history of the country or the value for their people, including archaeological heritage. The definition of archaeological heritage is in this case: buildings, objects or remains that, independently or jointly, and whether in the context of the location, indicate human activities that took place in the past, that are older than fifty years (wetten.overheid.nl).

The first step in the archaeological process is a desk-based assessment of the planned area of construction. In a desk-based assessment the archaeological expectancy of the planned area for development is determined by analyzing the geology and geomorphology, culture-historical data, and previous archaeological finds in the area. Eventually, with our collected data we prepare an archaeological expectancy for the planned area of construction.

1.1 The reason and objective of this research

The reason for this research is that renovation work of the roads, the construction of retention ponds and the placement of large boulders along the coast might interfere with existing archaeological heritage. Therefore, the objective of this assessment is to predict the archaeological value of the different areas by carrying out a desk-based assessment by using historical records and previous research.

1.2 The research area

The planned areas for development are scattered all over the island of St. Eustatius. The area that is discussed in this report is divided in three areas, green, blue and yellow (Fig. 1). The green area covers the following roads and locations: Mansion road (also known as Korthalsweg) from the intersection with the Lampeweg/Scrubon road towards the road to Lynch until the entrance road towards the schools, a small retention pond just before the solar park (see R1 on Fig. 2), a retention pond to the right of the NuStar compound and across the street from the ruins of a sugar plantation called Fair Play (see R2 on Fig. 2) and the drain that starts as an extension to the road to Lynch towards the airport and then goes down towards the sea (see G1 on Fig. 2). The blue area covers the following roads and locations: Korthalsweg from the intersection with the Lampeweg/Scrubon road towards the hospital at the Mansion road, part of the Sandy road from the Mansion road until the intersection with the road to Jeems, the Farm road, the retention pond at Sandy road (see R3 on Fig. 2). The yellow zone includes the entire coastal zone from the harbor towards the ruin of Fort Amsterdam.

Then there are a few retention ponds that are not associated with a color (see R4 to R9). The fourth retention pond is in between the Papaya road and the Welfare Road (see R4 Fig. 2). The fifth retention pond is in between the C.A. Millard Road and the Road to English Quarter (see R5 Fig. 2). The
sixth is the retention pond at the John A. Spanner Road (see R6 Fig. 2). The seventh is the retention pond behind the Old Church cemetery (see R7 Fig. 2). The eighth retention pond is along the Mansion Road (see R8 Fig. 2). Finally, the ninth retention pond is on the corner of the Lodi road with the Road to English Quarter (see R9 on Fig. 2); however, this pond is an already existing retention pond and will therefore be excluded from this research.

Figure 1: Proposed plans to counter Erosion on St. Eustatius, the areas are divided into three colors (source: Rijkswaterstaat).
Figure 2: The planned retention ponds numbered 1 through 9 (after source: Rijkswaterstaat).
2. Landscape and Cultural-Historical Framework

2.1 Geology and Geomorphology

Within the Lesser Antilles there is an active volcanic arc and an arc of limestone islands (from Barbuda to Marie-Galante) on an old volcanic base. The Lesser Antilles is subdivided into the northern Leeward Islands and the southern Windward Islands. St. Eustatius is part of the active arc and is located in the northern part of the Leeward Islands. The island, located at 17°28'-17°32' N and 62°56'-63°0' W, has a surface area of approximately 21 square kilometers (Roobol and Smith 2004, 36, 99; Westerman and Kiel 1961, 99).

St. Eustatius is comprised of three geomorphologic areas. The first area is the north-western part of the island, also known as the Northern Centers, which consists of an old volcanic landscape. The second one is the Quill volcano in the South. Finally, the third area is the plain between these two areas, also known as the “Cultuurvlakte” or agricultural plain (Westerman and Kiel 1961, 99). Initially, the Quill and the Northern Centers were separated from each other. However, the deposits of volcanic eruptions have formed the flat part (Cultuurvlakte) between the Quill and the Northern Centers (Roobol and Smith 2004, 103; 249; 264).

The three geological units on Statia are the Northern Centers, the Quill and the White wall and Sugar Loaf formation in the south (Fig. 3). The green, blue and yellow research areas are located in the same geological area (Fig. 3). This geological area of the Quill consists predominantly of agglomerates, lapilli and tuffs. The green and blue areas are located in a partly urban and partly rural areas. The yellow area is located in a coastal zone. The most common vegetation is grass, coralita (Antigonon Leptopus) and acacia trees (Acacia sp.).

Figure 3: Schematic geological map of St. Eustatius (De Palm 1985, 182).
2.2 Historical context
Amerindian peoples with origins in Central and South America have traveled and settled throughout the islands of the Caribbean for thousands of years. As a result, Statia was once home to a succession of different Amerindian groups and cultures. However, by the time Europeans arrived in the early seventeenth century, Statia had not been a permanent home to any of the Amerindian groups for approximately 500 years. Even though they did not live on the island during that time, it was known to many local groups. Historical records from the year 1665 indicate that the contact period Arawakan people knew the island as ‘Aloi’ which means “cashew tree”.

The Amerindian groups on Statia included groups identified as Saladoid and Troumassoid, distinguished from other groups by their cultural traits and ceramic types. The Saladoid culture flourished for more than 1,000 years from 500 BC to 545 AD; however, the world-famous Golden Rock site on Statia is a late Saladoid site dating from 600-900 AD. The Troumassoid culture was later, from 900 to 1500 AD. Earlier dates have been found on Saba that date back to 1950 BC. It is therefore highly likely that Statia was inhabited at that time as well. This is substantiated by the many preceramic sites along the east coast of St. Eustatius.

The peoples on Statia lived in small communities and depended in large part on the sea for food, fishing and collecting shellfish. They also likely gathered nuts and fruits, practiced horticulture and dug for root crops.

Christopher Columbus sailed by St. Kitts and St. Eustatius on November 13th in the year 1493. Columbus named the island S. (Maria) de la niebe; however, he did not land there. The Spanish were not interested in St. Eustatius and the other smaller Caribbean islands. The self-proclaimed Spanish possessions in the Caribbean were extended over a too large area to be fully controlled. Therefore, the Spanish focused on holding their ports on the larger islands, the Greater Antilles.

When the Dutch revolted against Philip II, King of Spain, and started the Eighty Years’ War (1568-1648), they began to take a leap into the unknown and crossed the Atlantic Ocean. One of the main products for which the Dutch crossed the Atlantic Ocean was salt (Goslinga 1979, 20; Klooster 1998, 26; Postma and Enthoven 2003, 30-1). The smaller Caribbean islands were, because they were not defended by the Spanish, interesting for the Netherlands and other European countries to colonize and obtain a stronghold in the Caribbean (Dalhuisen et al. 1997, 76). Additionally, the Caribbean was an area the Spanish silver fleets would sail past, and the smaller Caribbean islands were perfect to spy on these fleets and perform an attack (Goslinga 1971, 54).

Since the year 1624, Dutch ships had already dropped anchor at St. Eustatius (Knappert 1932, 2). In 1629 the French had constructed a fort on the island but left soon after occupation due to a lack of good drinking water (Dalhuisen et al. 1997, 76; Attema 1976, 17; Hartog 1997, 24). On April 25th, 1636, Pieter van Corselles and his 40 colonists took possession of St. Eustatius. They rebuilt the French fort and called it Fort Oranje. One of the reasons for the colonization of St. Eustatius might be the high demand for tobacco. Jan Snouck promoted the island by telling that “good tobacco could be planted and vast profits could be reaped” (Attema 1976, 16; Goslinga 1971, 262; Klooster 1998, 32).

In the next twenty years of the colonial life of St. Eustatius the colonists started planting sugar instead of tobacco. This cultivation of sugarcane required enslaved Africans to work the land (Fig. 4) (Attema 1976, 17; Goslinga 1971, 263). Therefore, in the following years there was an increase in the number of inhabitants on St. Eustatius. By the year of 1665 there were “330 whites and 840 negroes and
indians” residing on the island (Hartog 1964, 223). The trade in commodities and enslaved people drew international merchants to the island (Attema 1976, 16). This prosperous trade caused other countries to be envious and this marked the beginning of the turbulent history of St. Eustatius. In the years between the 1665 up until 1713, the island changed flags fourteen times between the Dutch, the French and the English (Dalhuisen et al. 1997, 76).

By the year 1715, eleven sugar plantations were back in business (Goslinga 1985, 131). Still, the island would never develop into a “full-fledged plantation” economy because of the lack of fresh water on the island (Enthoven 2012, 246). Simply not enough rainwater could be conserved with the use of cisterns to irrigate sugarcane fields (Miller 2008, 30). Instead, Statia became an international trading hub for the exchange of commodities and slaves. From the late seventeenth century until the year 1729, slaves were the main commodity of trade (Fig. 5). However, from 1730, sugar took over this position (Enthoven 2012, 293-4). The kleine vaart, the (illicit) inter-island trade between the many isles, was the main carrier for this commodity (Goslinga 1985, 189). St. Eustatius was in fact a “clearing station” for all the other islands that had to follow their countries monopoly system, which meant that a colony could only trade with its mother country (Hartog 1976, 40). The size of this illegal trade can be seen in the import and export numbers of sugar in St. Eustatius. In the whole of 1779, the island produced 13,610 pounds of sugar, while it exported almost 25 million pounds of sugar (Goslinga 1985, 227). In that same year, 3551 ships dropped anchor at St. Eustatius to trade and there were 3056 people living on the island. It was during this time
that St. Eustatius received the name “Diamond Rock” or “Golden Rock” (Goslinga 1985, 141; Hartog 1976, 41, 46).

Figure 5: Drawing by S. Weuijster depicting slave traders in the roadstead of St. Eustatius in 1763. Goods and people are being transported between ships. One of the sailing ships bears the name Sara Helena. Source: Atlas van Stolk collection, Rotterdam.

When in 1776 the Andrew Doria was salute by firing back the same amount of salutes it became the first nation that ‘recognized’ an American warship. The salute together with the ongoing trade with the American Rebels caused the English to declare war on the Dutch (Fourth Anglo-Dutch War 1780–1784). Therefore, on the 3rd of February 1781, Rodney and his fleet sailed into the harbor of St. Eustatius and demanded the islands’ surrender (Hartog 1976, 86-7). Rodney plundered the island and even held the Dutch flag up for over a month to collect the booty from over more than 150 incoming ships (Fig. 6) (Goslinga 1985, 149).
St. Eustatius was returned to the Dutch in 1784 and the island once again knew a prosperous time. The recovery of the island, although short lived, can be seen in two things. First, the number of ships that dropped anchor in Orange Bay increased. During the year 1784, a total number of 2,100 ships had come to St. Eustatius, while in 1792, this was 3,500. Second, there was an increase in population size. In 1781, there were a total of 2,929 people living on the island. In the year 1789, there were a total of 8,102 people, of which 5,120 were enslaved Africans (Jordaan 2012, 2-3). In 1790 there were even 8,124 people residing on the island (Hartog 1976, 100).

The island’s trade declined after 1793, because the United Provinces were now at war with France (French Revolutionary Wars 1792-1802). After the French the island swapped another four times between the Dutch and the English until it permanently became Dutch in 1816.

Below the plans for the erosion project are plotted on some of the historical maps of Statia (Fig. 7 – Fig. 10). Only the maps that show an accurate description of the interior of the island have been chosen. The first map is made due to the English conquest of Statia in 1781 (Fig. 7). This map, made by P.F. Martin, shows all the existing plantations on the island at the time in great detail. Furthermore, the land boundaries, roads and the town are extremely well depicted.
Figure 7: The proposed erosion project plotted on the map made by P.F. Martin in 1781. Source: digital copy on file at SECAR.
To start with the green area, the planned gully (G1 on Fig. 7) starts at the top left and crosses the land of the heirs of Stuart. On the other side of the road from the planned retention pond (R2 on Fig. 7) there is a plantation that is now called Fair Play. Downwards of the retention pond is another sugar plantation that is on the land of Derick Salomons and the Company’s land. There are two plantations on the land of Widow Sally Benners. Both locations on the land of Widow Sally Benners have been investigated before and will not be affected by the proposed plans of road renovation and the associated water drainage. The green area changes into the blue area at the intersection. On that road, which is now called Sandy Road, are two plantations drawn on the left just before another intersection. One plantation is on the land of M.D. Godet Senior and the second one on the land of George James. On the other side of the road from the latter two plantations is property that is owned by Governor de Graaff. A plantation is listed on De Graaff’s property. The blue highlighted road that is now known as the Mansion Road goes through the upper part of Upper Town. The retention pond (R3 on Fig. 7) is on the property of Widow Ducas and close to a plantation that is now known as Schotsenhoeck. The blue proposed road goes downwards towards Lower Town and ends in the bend in the road there. The yellow area starts at the plantation that was owned by M.D. Godet Senior all the way towards Gallows Bay.

The retention ponds (R4 and R7 on Fig. 7) are located on the property that was once owned by Simon Donkers. Retention pond (R7) is just behind the Old Church Cemetery and on the location of where once the slave village of the adjoining Princess Estate was. The retention ponds (R5 and R8 on Fig. 7) look to be located on property that once belonged to Widow Ducas. Retention pond is close to an area to what historical records name the Free Black Village. Retention pond (R6) is on agricultural land with no property owner listed.

The second map is made by A.H. Bisschop-Grevelink between 1839 and 1846 (Fig. 8). This map shows the plantation names that we still use up to present day. A large number of the plantations have changed into a veehoeve, which is Dutch for cattle farm, by that time. The land boundaries, forts and roads are well depicted on this map.
To start again with the green area, the planned gully (G1 on Fig. 8) starts on at the top right this time and crosses *gouvernements gronden*, which is Dutch for governmental grounds. On the other side of the road from retention pond (R2 on Fig. 8) is a plantation called Fair Play (I on Fig. 8). The green area changes into the blue and goes down towards the retention pond (R3 on Fig. 8) near the plantation that is called
Schotsenhoek (C on Fig. 8). Retention pond (R8 on Fig. 8) is close to a cattle farm on this map (L on Fig. 8). The yellow area starts at Fort Amsterdam and Rotterdam and ends at the notches in the cliff. (Fig. 8). Retention ponds (R4 to R6 on Fig. 8) are located on agricultural land. Retention pond (R7 on Fig. 8) is located behind the Old Church Cemetery (number 4 on Fig. 8) and on the old Princess Estate plantation (letter B on Fig. 8).

The third map is made by J.V.D. Werbata in 1915 (Fig. 9). This map shows the plantation names that we still use up to present day. The land boundaries, forts and roads are well depicted on this map. Also, for the first time, elevations are shown on the map.

Figure 9: The proposed erosion project plotted on the map made by J.V.D. Werbata in 1915. Source: Algemeen Rijksarchief 4.MIKO 2107.
To start with the green area, the planned gully (G1 on Fig. 9) starts on at the top right. On the other side of the road from retention pond (R2 on Fig. 9) is a plantation called Fair Play (Fig. 9). According to this map, there is a steenen afsluiting, a stone wall, from Fair Play going around the corner to the right (see red dots on Fig. 9). Another stone wall is depicted from elevation 57.9 towards the first road to the right at Cherry Tree.

The green area changes into the blue and goes down towards the retention pond (R3 on Fig. 9) near the plantation that is called Schotsenhoek (Fig. 9). Retention pond (R8 on Fig. 9) is close to an area that is called Para Mira on the map. The yellow area starts at Billy gut and ends at Gallows bay (Fig. 9). Retention ponds (R4 to R6 on Fig. 9) are located in an area where no structures are depicted. Retention pond (R7 on Fig. 9) is located near a cemetery (see crosses on Fig. 9).

The fourth map is published by the cadastral survey department of the Netherlands Antilles in 1964 (Fig. 10). This map is the first map that is based on photographs. The photographs were taken by KLM Aerocarto N.V. Therefore, the land boundaries, forts and roads are depicted extremely accurate. This map also depicts wells and cisterns.
Figure 10: The proposed erosion project plotted on the map published by the cadastral department of the Netherlands Antilles in 1964. Source: KITLV library, request number D A 44, 11.

To start with the green area, the planned gully (G1 on Fig. 10) starts on at the top right. On the other side of the road from retention pond (R2 on Fig. 10) is a plantation called Fair Play (Fig. 10). According to this map, there is a steenstapeling, a stone wall, on the right side of the road coming from the ruin of Cherry tree going to Fair Play. In the bend in the road at retention pond (R1) the stone wall is depicted on both sides of the road (see black line on Fig. 10).

The green area changes into the blue and goes down towards the retention pond (R3 on Fig. 10) near the plantation that is called Schotsenhoek (Fig. 10). The blue line goes down towards Lower Town.
Retention pond (R8 on Fig. 10) is close to an area that is called Mansion on the map. The yellow area starts at Billy gut and ends just before an area called Prospect (Fig. 10). Retention ponds (R4 to R6 on Fig. 10) are located in an area where no structures are depicted except for some (modern) fences. Retention pond (R7 on Fig. 10) is located near a cemetery and ruins. (see R7 on Fig. 10).

2.3 Archaeological context

The first person to discover and mention prehistoric Amerindian sites on St. Eustatius was J.P.B. de Josselin de Jong in 1923 (Josselin de Jong 1947). Josselin de Jong visited the island in that year as a part of the cooperation between the National Museum of Ethnology in Leiden and the National Museum in Copenhagen (Versteeg and Schinkel 1992, 6).

During the summers of 1981 and 1982, Dr. Jay Havisier surveyed the island and revisited the prehistoric sites that were mentioned by Josselin de Jong. Due to Havisier’s survey a joint venture began between Leiden University, the Institute of Archaeology and Anthropology of the Netherlands Antilles and the St. Eustatius Historical Foundation. Between 1984 and 1989 there were archaeological field schools that worked on the now well-known Golden Rock site. The archaeological context of this site will not be covered in this report but can be found in the previous report An Archaeological Desk-Based Assessment and Field Investigation of the Airport, St. Eustatius (SECAR archaeological report number 20190501). Other (older) sites were uncovered after Jay Havisier’s survey of the island in 1983 (Havisier 1983). Havisier discovered several Archaic Age sites on the east coast of Statia.

One of these sites that were discovered by Havisier was the Archaic Age site (SE-82) (Fig. 11). Later on, this site was investigated by Leiden University (Gilmore et al. 2011). Finds consisted mainly of Cittarium pica shells, with flint being present in low quantities. Surface finds added Lobatus (Strombus) gigas, some coral and two basaltic stones. The latter were identified as a core for flaking technology and an end-product (Gilmore et al. 2011, 49). The unnamed coastal cliff site (SE-80) (Fig. 11) was also discovered by Havisier in 1983 and visited by Leiden University (Gilmore et al. 2011, 50). Havisier found Saladoid ceramics and shell in the 80s. Small pot sherds and flint were discovered by Leiden University but no diagnostic material was found (Gilmore et al. 2011, 50).
Research on the colonial time period of the island started with the famous Ivor Noël Hume (Noël Hume 1969). The study on the colonial time period of St. Eustatius continued in the 1970s with Norman Barka and Edwin Dethlefsen of the College of William and Mary (Dethlefsen et al. 1982). The College of William and Mary was active throughout the 1980s by having field schools on St. Eustatius. In the year 2004, the St. Eustatius Center for Archaeological Research (SECAR) was established by Richard Grant Gilmore III (secar.org). This center was the first permanent archaeological presence on the island. SECAR would organize archaeological field schools every year. The sugar plantation Fair Play was the subject of the field schools during the years 2014 and 2015.

**Fair Play**

Fair Play Plantation consists of 17 known features that include a windmill (Fig. 12), animal mill, boiling house, overseers residence, animal enclosure, warehouses, shipping platform, workshop, privy (or storage shed), four slave huts, two fence alignments, a slave storage pit, and an unknown masonry structure located near the slave quarters (Cook 2015, 45).

Data recovery from the slave quarters and feature 9, the great house, offer the only chronological data from the material culture at Fair Play Plantation. Chronological information from the data recovery at feature 9 was consistent with the other dates recovered from the Slave Quarters. Feature 9 has the latest occupational dates that begin around the mid-18th century and continue to a date of complete abandonment around 1950. However, evidence shows that feature 9 was in use as part of the plantation complex from around 1750 to 1840. With only the other dated material from Fair Play Plantation recovered from the Slave Quarters (1760-1840) the two set of dates tell us that the majority of industrial activity for Fair Play Plantation occurred between 1750 and 1840 (Cook 2015, 45).
Free Black Village and Kongo Burial Ground

In the years 2008 to 2010, an archaeological site called Free Black Village (SE-132) was subject of a field school under the supervision of Richard Grant Gilmore III (Gilmore 2010). Free Black Village is located at the Mansion road on the other side of the road from the Seven Day Adventist Church. Free Black Village is in close proximity to the site Kongo Burial Ground (SE-131) (Fig. 13). Kongo Burial Ground was surveyed by Laurie Paonessa in 1989 and excavated by Norman Barka in 1993. The site contains numerous marked and unmarked graves of enslaved/free Africans (Paonessa 1990).
Schotsenhoek
The old sugar plantation called Schotsenhoek (SE-92) (Fig. 14 and Fig. 15) was subject of research during the years 2011 to 2013 when NuStar, the oil terminal on the island, planned to construct a new laydown area. The impacted archaeological site was identified by Stelten in 2011 during an initial survey and test trench of the area (Stelten 2013, 2). In the year 2012 the site was interpreted as a slave village (SE-610). This interpretation was based on the spatial relationship of the features, the artifacts from the features and the location in the wider landscape (Stelten 2013, 19). The latter shows that the village was located on a slope downwind from the plantation’s industrial complex and big house, and out of sight from the great house. This configuration can be seen on many sugar plantations on St. Eustatius and suggest that Statian slaves may have enjoyed more (psychological) freedom than slaves on other island (Stelten 2013, 31).

In the months January, February and March of 2013 a field school was organized to investigate the remaining parts of the settlement. During the investigation, seven dwellings were identified, in addition to five ditches, a hearth, two animal burials, several plough scars, and numerous post holes. On the basis of the artifacts found during the excavation, the site was dated to the early to mid-eighteenth century (Stelten 2013, 31). Interesting is that the slave village on the 1781 map of P.F. Martin was depicted on the slope of Signal Hill. This could mean that the slave village was moved from its location near the plantation to a location much farther away from the plantation.
Figure 14: The location of the Schotsenhoek plantation (SE-92) and slave village (SE-610) (after google.earth.com).

Figure 15: Reconstruction drawing of the slave settlement and adjacent plantation based on archaeological and historical evidence. Drawing made by Andy Gammon, June 2013.
Princess Estate
During the summer of 1986, the tract of land that is called Princess Estate (Fig. 16) was the subject of the College and Mary Archaeological Field School. One prominent building called SE-220 was excavated. Originally this building was interpreted as a Jewish Mikvah, but after excavation it was interpreted as a boiling house for the production of sugar and the distilment of rum. The excavation revealed eight features in the building such as the furnace or boiler for the heating of sugar juice in kettles, cooling tanks to promote cooling and granulation of the struck sugar juice in the boiler, a tank for holding or containing sugar juice, holding tanks for molasses and a small fireplace for heating a distilling apparatus. The last feature are the remnants of stairs, needed for distillation servicing. The presence of a large cistern and ruins of other structures, possibly domestic buildings, to the immediate north of the sugar boiling house tends to reinforce this belief (Barka 1987, 41-46).

Based upon the type of ceramics found within the fill of certain features, the SE220 building seemingly dates to the 19th century. Very few, if any, 18th century artifacts have been uncovered (Barka 1987, 31).

Figure 16: The location of Princess Estate with the boiling house (SE-220) and cistern (after google.earth.com).

Lower Town
During the first two years of the College and William and Mary Archaeological Field School (1981 – 1984) all the visible warehouse ruins along the coast were mapped. In addition, ruins were given site designations, measured (as far as possible), photographed, and studied (Barka 1985, 11). Four warehouse structures have been partially excavated in order to obtain data on different locations within the Lower Town. It was found that the stratigraphy was very complex throughout the area. The vast majority of artifacts in Lower Town eroded from deposits in Upper Town and dated predominantly to the late-eighteenth and early-nineteenth centuries. Many structural features were found in test units on the cliff
side immediately north of the Bay Path, including stone walls and various types of pavements. These were in a much better state of preservation than the ruins on the seaside. A test unit on a seaside structure, however, yielded good evidence of stratigraphy and a yellow brick floor. Below the floor, various early-eighteenth-century artifacts were found, indicating that in at least some instances the destruction by waves to the archaeological deposits is not as great as one might think. Soil layers above the floor, however, indicated that the upper part of the site was disturbed by natural processes, which was further evidenced by a mixture of eighteenth-, nineteenth-, and twentieth-century artifacts found in the deposits (Barka 1985, 30-42).

In December 2011 a 450-m long trench for a fiber-optic cable was excavated between the Bay Path and Smoke Alley in Lower Town. This fiber-optic cable would connect St. Eustatius to neighboring St. Kitts and provide a faster internet connection to the island. A total of 37 structural features have been documented in the trench (Fig. 17). These features included demolished and intact walls, floors, drains, steps, a vat and a cistern. Interestingly, a large number of faunal (mammal) remains were uncovered between Features 34 and 36. These faunal remains were found in the vicinity of a plastered drain. The faunal remains in combined with the structural findings suggest that this structure may have been a slaughterhouse, whereby the drain(s) would have been used to channel the slaughtered animals’ blood to the sea. Another interesting discovery included the 281 Amerindian ceramics that have been found underneath the King’s Well resort in Lower Town. These artifacts reflect both flat and hollow form vessels, griddle fragments, and one anthropomorphic adorno. The ceramics include plain or undecorated examples as well as burnished, red-slipped, red-slipped and burnished, white-on-red-painted, and black-and-white-on-red designs. One mammal and two turtle bones were also collected, along with one volcanic groundstone axe fragment and a volcanic cobbler tool. These artifacts were found in a shell midden underneath the colonial structures, starting at a depth of about 2.5 m. The ceramics point to a Saladoid to post-Saladoid occupation. This site is almost certainly part of the Smoke Alley prehistoric site (SE-152), which has now been shown to be larger than previously thought (Stelten 2015, 237-241).
In March 2013 over 150 meters of cliff erosion was excavated at Lower Town’s northern end for the construction of a new parking area. The 2-day excavation was monitored by Ruud Stelten, who recorded an historic cistern, two historic walls with associated yellow brick floor, a single historic wall, and a possible rum distillery (SE-436) (Fig. 18). Artifacts found in the eroded material covering the possible rum distillery included many late-eighteenth- and early-nineteenth-century case gin and wine bottles and several different types of ceramics. After a heavy rainstorm, another rum distillery (Fig. 19) was found in May 2013 by Stelten in Lower Town’s southern part (Stelten 2015, 241-242).
Figure 18: Possible rum distillery found in Lower Town’s northern part. Scale bars: 2 m. Source: digital copy on file at SECAR.

Figure 19: Possible rum distillery found in Lower Town’s southern part. Scale bar: 1 m. Source: digital copy on file at SECAR.
3. Archaeological Expectation and Advice

3.1 Archaeological expectation

In conclusion, it can be said that the research area passes a number of well-known archaeological sites. From the moment of European colonization in the seventeenth century, Statia has gone from a plantation economy to becoming the Golden Rock in the eighteenth century. The historical and archaeological context show these remnants of the past, such as the plantations and warehouses. The discoveries of a possible slaughterhouse and rum distilleries in Lower Town show the diverse activities that were going on at that time.

On the basis of the historical documentation and archaeological findings there are archaeological sites that might interfere with the proposed plans for the erosion project of Rijkswaterstaat. These sites are shown on the Archaeological Predictive Map of St. Eustatius, Caribbean Netherlands (appendix 1). The archaeological expectation is shown below using the three-color zones provided to us by Rijkswaterstaat.

Green zone

Starting with the green zone in the top right corner (Fig. 2). The proposed gully (G1) is close to two archaeological sites, the Archaic Age site near Smith Gut (SE-82) and the unnamed coastal cliff site (SE-80) (Fig. 11). Therefore, the area near the coast has a high archaeological expectancy due to the possibility of more (unknown) prehistoric sites or extensions of the known prehistoric sites (appendix 1). Archaeological remains that can be found are postholes, ceramics and faunal and lithic tools.

Retention pond 2 is in an area that has a partial medium archaeological expectancy (appendix 1). This medium expectancy is due to its vicinity to the Amerindian Golden Rock site. Again, archaeological remains that can be found are Amerindian house plans (postholes), middens, burials and loose ceramics, faunal and lithic tools. Retention pond 1 is in an area with a low archaeological expectancy.

The roads in the green zone are in an area of low archaeological expectancy with the exception of the roads near the historic sugar plantation called Fair Play. However, if there will be no deviation towards the Fair Play plantation, then it will also have a low archaeological expectancy. Archaeological remains are entire buildings that served commercial or industrial uses. Accompanying material that can be found are historic ceramics, glass, metal and faunal remains.

Blue zone

Retention pond 3 is close to the historic sugar plantation Schotsenhoek. Due to the ‘unexpected’ discovery of a slave village around the sugar plantation in 2012, the archaeological expectancy is high near the plantation and is medium for the remaining area (appendix 1). This is because of the possibility of finding an earlier or later slave village. The roads in the blue zone are in an area that has either a high or medium archaeological expectancy. However, if there will be no (large) deviations from the current road, then it will also have a low archaeological expectancy. With the exception of the road at the hospital. There is a possibility that the Old Church cemetery extended towards the current hospital. An informant of Laurie Paonessa, who did her research on the historical cemeteries of St. Eustatius in 1989, stated “that this cemetery used to extend westward where the road Merkman Weg and the hospital now stand; human bones were reportedly exposed when the land was being prepared for construction of the hospital”
Archaeological material that can be found are human remains, historic postholes, ceramics, glass, metal and faunal remains.

Yellow zone
Lower Town was once one of the most densely populated areas of the island. In the eighteenth century, the total price of real estate of this small strip of land was one of the most expensive ones in the New World. In the late eighteenth century Lower Town housed an estimated 200 structures consisting of warehouses, merchant homes, brothels, shops and taverns. Relatively little development has taken place in Lower Town. Therefore, the whole of Lower Town has a high archaeological expectancy. Archaeological remains are entire buildings that served commercial or industrial uses. Accompanying material that can be found are historic ceramics, glass, metal and faunal remains. With the discovery of prehistoric material below King’s Well in 2011, archaeological material that can also be found are prehistoric postholes, ceramics and faunal and lithic tools.

Other retention ponds
With the use of the Archaeological Predictive Map of St. Eustatius (appendix 1), it becomes clear that retention ponds (R4 – R6) are in an area with a low archaeological expectancy. Retention pond 7 is just behind the Old Church cemetery and on the property that belongs to Princess Estate (Fig. 16). On the 1781 map it shows that there was once a slave village on the location of retention pond 7 (Fig. 20 and Fig. 21). The slave village is shown in red, the Old Church cemetery in light green and the Jewish cemetery in blue (Fig. 20 and Fig. 21). Keeping in mind that the cemetery possibly extended towards the hospital, an extension towards Princess Estate is therefore also a very real possibility. The archaeological material that can be found are historic postholes, ceramics, glass, metal, faunal remains and human remains.

Retention pond 8 is near the archaeological site Free Black Village (SE-132) (Fig. 7 and 13). Therefore, the Archaeological Predictive Map of St. Eustatius (appendix 1) shows the area with a high archaeological expectancy. Archaeological material that can be found are historic postholes, ceramics, glass, metal and faunal remains.
3.2 Advice
The majority of the research area for the erosion project has a low archaeological expectancy. However, there are certain areas that needs archaeological guidance or field investigations due to their vicinity of archaeological sites. With archaeological guidance an archaeologist guides a contractor in close consultation with excavation work. If they encounter archaeological remains, the contractor must stop the work. The archaeologist documents the remains or removes them. Then the contractor can go back to work. Field investigations include the excavation of test trenches of a small part of the area that can provide a definitive answer for a larger area.

Below the areas are discussed according to the color-coded zone they are found in.

Green zone
Due to the possibility of more (unknown) prehistoric sites or extensions of the known prehistoric sites, an archaeological guidance is recommended for the proposed gully (G1 on Fig. 2). Archaeological guidance is also recommended for retention pond 2 due to its vicinity of the prehistoric Golden Rock site.

Blue zone
Due to the vicinity of the historic sugar plantation Schotsenhoek and to the ‘unexpected’ discovery of a slave village, field investigations are advised for the area adjacent to the plantation. Archaeological guidance is recommended for the road near the hospital.

Yellow zone
Although the whole of Lower Town has a high archaeological expectancy, any further archaeological guidance or research is not necessary if the work will only consist of the placement of sand and large boulders. Following the condition that no archaeological structures are under threat with the placement of sand and large boulders.

Other retention ponds
Retention pond 7 is located in an area with a high archaeological expectancy due to its location on Princess Estate and close to the Old Church Cemetery. Therefore, field investigations are recommended for this area on Princess Estate. Field investigations are also recommended for retention pond 8 due to its location near the Free Black Village site and the Kongo Burial site.

The recommendation for the dry-stone walls, which can often be found alongside the road, is that most of them are best left in situ. By doing so these walls can contribute to the historical character of the property. Furthermore, more importantly, many of these walls were used to redirect water to slow down erosion (Gilmore 2004, 68). By removing all these walls, it might lead to an accelerated erosion of the landscape. Nevertheless, when these walls are to be disturbed, no further archaeological information needs to be recovered.
Websites

https://wetten.overheid.nl/BWBR0028429/2010-10-10, accessed on December 18th, 2019
Bibliography

Attema, Y.

Barka, N.F.
1987 *Archaeological Investigation of the Princess Estate, St. Eustatius Netherlands Antilles*. St. Eustatius Archaeological Series, No. 3. Department of Anthropology College of William and Mary Williamsburg, Virginia.

Cook, R.

Dalhuisen, L., R. Donk, R. Hoefte and F. Steegh

Dethlefsen, E., S.J. Gluckman, R.D. Mathewson and N.F. Barka

De Palm, J.Ph.

Enthoven, V.

Gilmore, R.G., M.L.P. Hoogland and C.L. Hofman
2011 An Archaeological Assessment of Cul-de-Sac (The Farm) SE 93 & SE 133) Phase 2. SECAR/Leiden University, Faculty of Archaeology.

Goslinga, C. Ch.
Hartog, J.
1976 Geschiedenis van St. Eustatius. Aruba: De Wit Stores N.V.

Haviser, J.B.
1983 An Inventory of Prehistoric Resources on St. Eustatius, Netherlands Antilles. Preliminary report.

Jordaan, H.

Josseling de Jong, J.P.B. de.

Klooster, W.

Knappert, L.

Paonessa, L. J.

Postma, J. and V. Enthoven (eds)

Roobol, M.J. & A.L. Smith
2004 Volcanology of Saba and St. Eustatius, Northern Lesser Antilles, Royal Netherlands Academy of Arts and Sciences, Amsterdam.

Stelten, R.
2013 Archaeological excavations at Schotsenhoek plantation, St. Eustatius, Caribbean Netherlands: An early- to mid-eighteenth-century slave settlement at a sugar plantation on the
Caribbean’s ‘Historical Gem’. SECAR Report.

Versteeg, A. H. and K. Schinkel

Westerman, J.H. and H. Kiel
1961 The geology of Saba and St. Eustatius: with notes on the geology of St. Kitts, Nevis, and Montserrat (Lesser Antilles). Natuurwetenschappelijke Studiekring voor Suriname en de Nederlandse Antillen, Utrecht.
Appendix 1 Archaeological Predictive Map St. Eustatius, Caribbean Netherlands