Environmental Bulletin of Samos

"Aristarchos of Samos" Airport (SMI)

Reference year 2018

Fraport Greece

May 2019

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Version Control

Version	Revision	Description of Revision	Date
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1. INTRODUCTION

Location

"Aristarchos o Samios" airport of Samos has been operating since 1963 and is located at 14 km from the town of Samos (Vathy) and at approximately 3km from the town of Pythagoreio. The airport is located to the south side of the island, near the settlement Potokaki.

Administration

The airport administratively belongs to the Municipal Communities Chora and Pythagoreio of the Municipal Unit Pythagoreio of the Municipality of Samos of the homonym Regional Unit, of the Region of North Aegean

Environmental licensing

Approved Environmental Terms	
E.T. Decision Reference number	Ref. No οικ 106454/14.03.2000
E.T. Amendment Decision Reference number	Ref. No οικ. 131852/27.10.2010
	Ref. No οικ 3704/12.02.2018

1.1. Airport Basic Data

Airport Basic Data					
Airport name IATA / ICAO	SMI / LGSM				
Airport position – Airport Reference Point (ARP)	Latitude: 37° 41' 21" N Longitude: 26° 54' 44" E				
Altitude:	5.74 m				
Number of runways	1				
Operation hours (high season)	06:00 – 22:00				
Runways	**Length / Width**			**Code**	
Runway	2,044m x 45m			09/27	
Full length of parallel taxiway	N/A				
Number of taxiways	3				
Apron capacity	A	B	C	D	E
	-	-	4	4	-
Employees	**High season**			**Low season**	
Fraport Greece (FG) employees	21			18	
Employees of other companies	40			21	
Terminal					
➢ Total area **(m^2)**	8,100				
Other buildings and service/storage areas					
➢ RFF **(m^2)**	Temporarily housed in ISOBOX until completion of new RFF				
Parking Areas					
Car parking spaces	370				

Bus parking spaces	20
Taxi parking spaces	20

1.2. Airport Facilities

1.2.1. Fuel Handlers

Number of fuel handler companies			
Number of fuel handler companies operating at the Airport			
Installations inside the airport	**EKO**	**GISCO**	**HAFCO**
Environmental Management System (EMS) ***(YES/NO)***	YES	YES	Not operating at the airport

1.2.2. Ground Handlers

Ground Handlers			
Number of ground handler companies operating at the airport			**3**
Installations inside the airport	**SKYSERV**	**SWISSPORT**	**GOLDAIR**
Vehicles *(total number)*	12	16	61
Environmental Management System (EMS) ***(YES/NO)***	YES	YES	YES

2. TRAFFIC DATA STATISTICS

2.1. Annual Traffic Data

Annual Traffic Data for the year 2018	
Overall Annual Air Traffic Movements[1]	6,203
Percent of increase or decrease in relation to the previous year	9.4%
Annual passenger traffic	462,749
Percent of increase or decrease in relation to the previous year	12.8%
Annual cargo transferred (tn)	268
Percent of increase or decrease in relation to the previous year	-11.94%

Aircraft types	
Prevailing aircraft types for domestic flights	
Aircraft type	**No. of flights**
DH8D	1777
AT45	942
AT43	424
JS41	278
SW4	120
AT72	114
EC35	52

[1] Military and training flights not included.

A320	14
PA3	12
GLF6	11
Other	196
Prevailing aircraft types for international flights	
Aircraft type	**No. of flights**
B73H	534
A320	288
B737	263
A319	236
B738	228
B73W	138
7M8	94
B734	68
B712	58
F70	48
Other	308

2.2. High season traffic data

High season traffic data (June-September)	
Highest traffic month	August
Air traffic movements during the month with highest traffic	1,020
Air traffic movements daily average number during the month with highest traffic	33

2.3. Low season traffic data

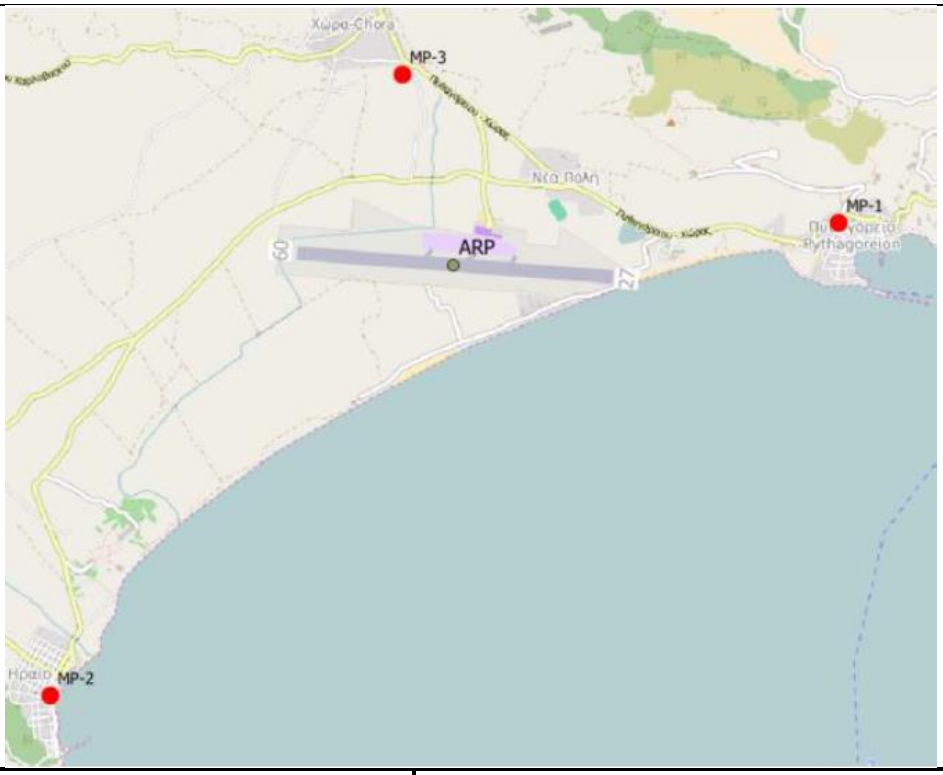
Low season traffic data (October-May)	
Lowest traffic month	February
Air traffic movements during the month with lowest traffic	209
Air traffic movements daily average number during the month with lowest traffic	8

3. AIRCRAFT NOISE

3.1. Noise measurements during the reference year

Have noise measurements at the airport's surrounding area been performed during the reference year? [YES/NO]	YES

Measurement points



Measurement points coordinates	**Measurement points description**
1) Position: 37° 41' 30" N 26° 56' 29" E	Pithagorio area, south of the runway on a house roof. Affected by arrivals RWY 27 and departures RWY 09
2) Position: 37° 39' 48" N 26° 52' 54" E	Hereo area, south-west of the runway on a house roof. Affected by arrivals RWY 27 and departures RWY 09
3) Position: 37° 42' 02" N 26° 54' 30" E	To the south-east of Chora, to the north of the runway, on the roof of a public building. Affected by all procedures to and from all directions
Measurement period	21.07.2018 – 22.07.2018
Noise indicators	Lden, Lnight

Summary of measurement results:

Noise levels are monitored according to the airport's monitoring program.
No exceedance of noise indicators levels Lden = 70 dB (A) and Lnight = 60 dB (A) was observed.

3.2. Noise levels calculation based on noise simulation software

Aircraft noise levels calculation based on simulation software [YES/NO]	**YES**
Software used: IMMI Noise Prediction Software	
Noise indicators and respective contours calculation:	L_{den}, L_{night}

L_{den}

L_{night}

Summary of results:

For the year 2018 no populations or buildings within residential areas were found to be exposed to noise levels higher than the limits Lden = 70 dB(A) and Lnight = 60 dB(A).

4. AIR QUALITY

4.1. Air quality measurements during the reference year

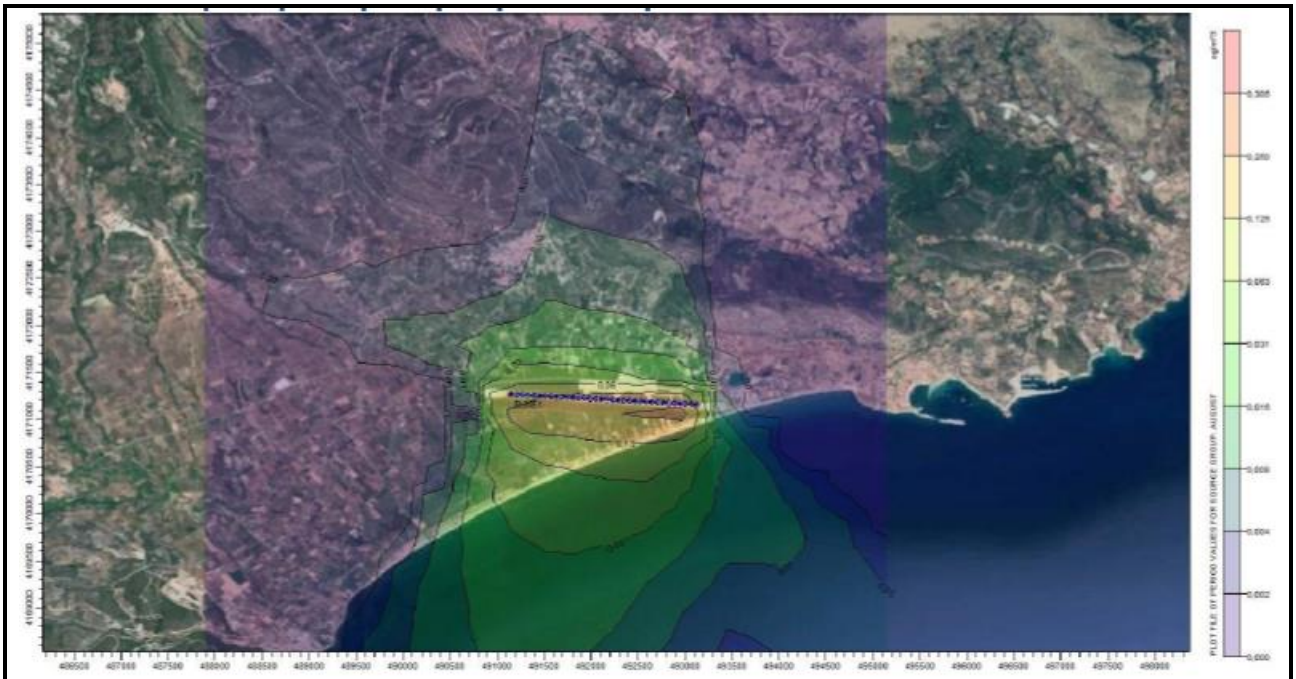
Have air quality measurements at the airport's surrounding area been performed during the reference year? [YES/NO]	**YES**

Measurement points

Measurement points coordinates	**Measurement points description**
1) Position: --° --' --" N --° --' --" E	At a distance of approximately 1.4km, in the parking area of the Citizens Service Center in Chora, to the north-west of the airport.
2) Position: --° --' --" N --° --' --" E	Settlement Potokaki and the station was installed at a distance of less than 300 meters from the runway.
Measurement period	30.10.2018 – 06.11.2018.
Pollutants measured: PM_{10}, $PM_{2,5}$, NO_2, SO_2, C_6H_6, O_3	
Summary of measurement results:	
Air quality is monitored according to the airport's monitoring program. No exceedance of the air quality limits was observed.	

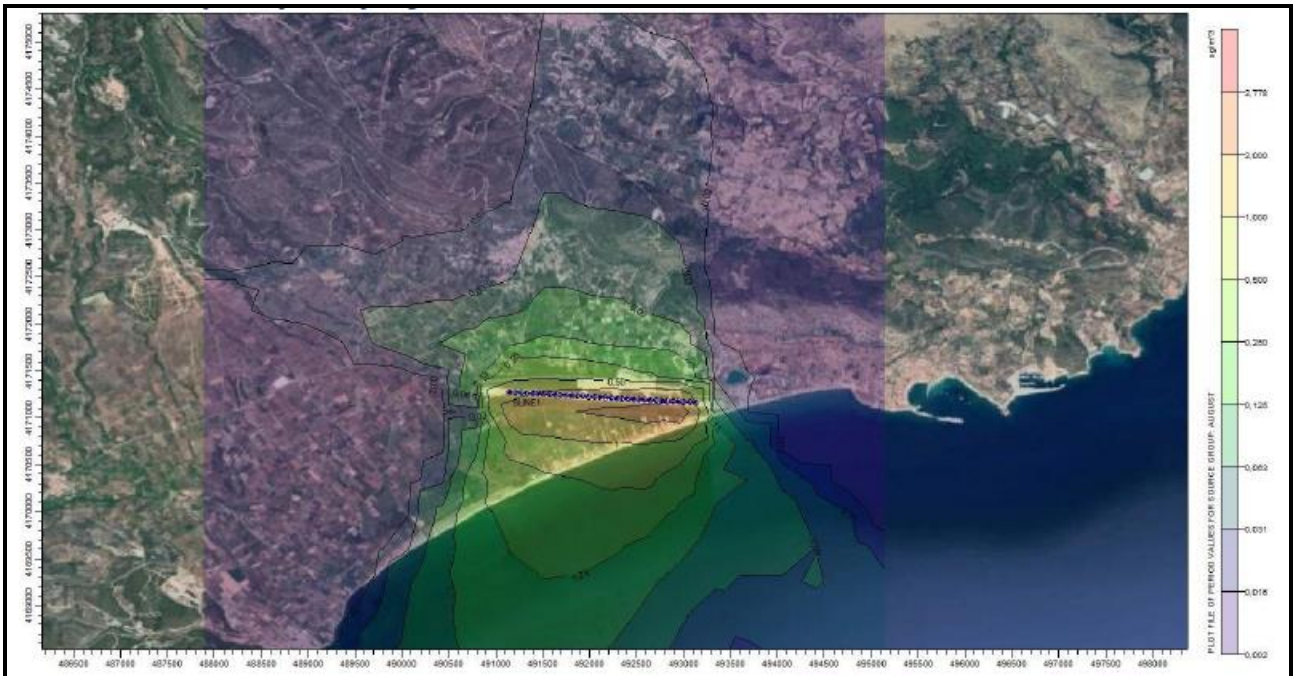
4.2. Air pollutants emission and dispersion modelling

Calculation of air pollutants concentrations based on an emission and dispersion modelling software [YES/NO]	**YES**
Software used: Emissions and Dispersion Modeling System (EDMS) - US Federal Aviation Administration & US EPA AERMOD	
Pollutants concentrations and respective contours calculation: PM_{10}, NO_X, SO_X, C_6H_6	

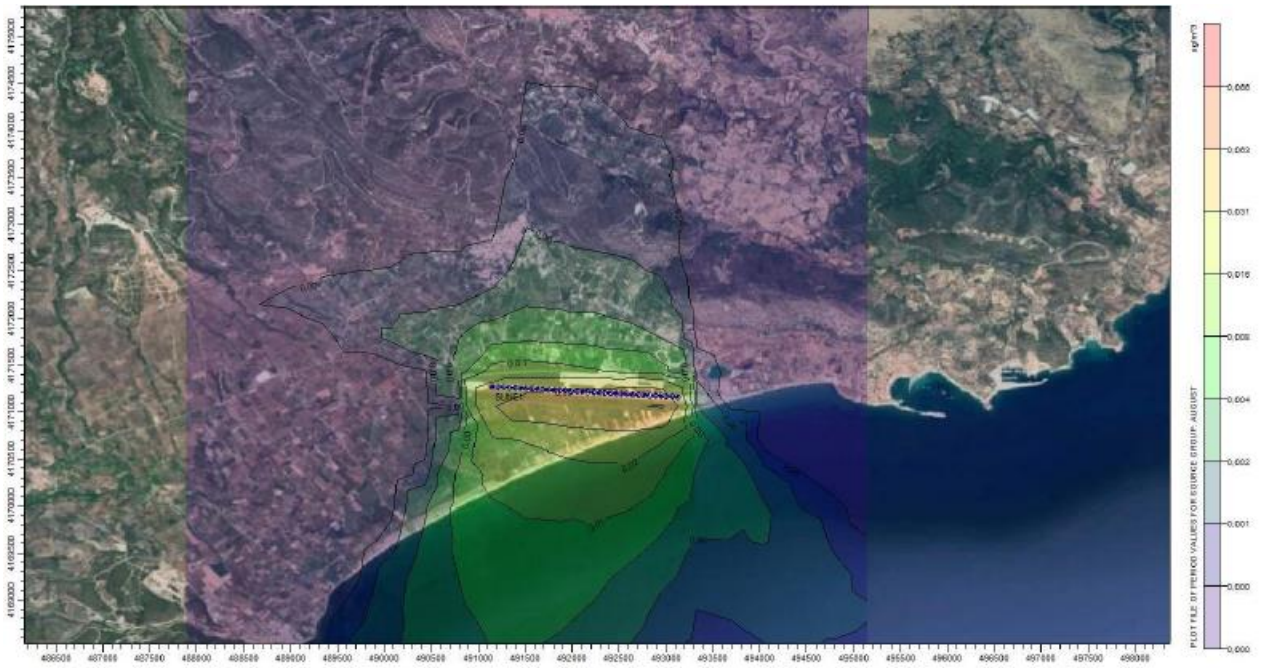


PM10

NOx



SOx



Benzene

Summary of results:

Air quality is monitored according to the airport's monitoring program.
No exceedance of the air quality limits was observed.
It is noted that the simulation of the ozone cycle is a difficult procedure the results of which are greatly dependent from the meteorological conditions and solar radiation data used in the photochemical model. The simulation of the specific pollutant is not possible.

5. WASTE MANAGEMENT

Waste management		
Waste	**Collection**	**Management/Disposal**
Municipal solid waste	Collection and emptying of garbage bins by an FG contractor inside the airport	Collection and management by the Municipality of Samos
Recyclables	Under development due to lack of local municipal or private infrastructures	Under development due to lack of local municipal or private infrastructures
Used oils	Collection by licensed collector "Cytop S.A."	Collection and management by licensed collector "Cytop S.A."
Electric & electronic waste	Collection by alternative management system "Appliances recycling S.A."	Collection and management by alternative management system "Appliances recycling S.A."
Accumulators	Collection by alternative management system "Re-Battery S.A."	Collection and management by alternative management system "Re-Battery S.A."
Small batteries	Collection in special bins of the company AFIS S.A. inside the airport	Collection and management by alternative management system "AFIS S.A."
Used tires	Collection by alternative management system "ECOELASTIKA S.A."	Collection and management by alternative management system "ECOELASTIKA S.A."
Notes:		
1. Ground handlers and fuel handlers manage all the categories of waste they produce independently **2.** The total quantities of the produced waste by category resulting from all activities of the airport are recorded by Fraport Greece B and submitted in the Electronic Waste Registry via the Annual Waste Producer Report as provided for by the applicable legislation.		

6. ECOSYSTEM AROUND THE AIRPORT

6.1. Flora-Fauna

ECOSYSTEM AROUND THE AIRPORT	
Flora	
Are there protected zones of vegetation/habitats in the broader airport area? ***[YES/NO]***	NO
(If YES) Short description:	
Fauna	
Are there protected zones of fauna/birds in the broader airport area? ***[YES/NO]***	YES
(If YES) Short description: Jackal (Canis aureus)	

6.2. Ecologically fragile areas

1. Samos Airport is located outside the limits of the protected areas included in the National Protected Areas Network and is at long distance from them.

7. WILDLIFE HAZARD MANAGEMENT

Wildlife hazard management	
Extent of the problem (bird species):	**Birdstrikes**
Passeridae spp. (Passeroidea)	1
Corvus cornix (Crow)	1
Columba livia (common pigeon)	1
Hirundinidae spp. (swallow)	2
Adopted measures :	
The following reports have been submitted to the Department of Airports Operation of the Hellenic Civil Aviation Authority: 2. "Wildlife hazard risk identification and management, Fraport Regional Airports of Greece A S.A., Reference period: 11 April - 31 December 2017" 3. "Wildlife hazard risk identification and management, Fraport Regional Airports of Greece B S.A., Reference period: 11 April - 31 December 2017". These reports provide information about: • Bird and other animal species management is done by FG in all airports with the exception of Aktion and Chania airports where wildlife hazard management belongs to the Hellenic Air Force • Birdstrikes or other species strikes on aircrafts data refer to the period between April 11-December 31 2017 • Birdstrikes or other species strikes on aircraft risk evaluation (strikes indicator is taken under account (birdstrikes number to the total ATMs) • Wildlife hazard management measures	
Reference year summary results: The number of strikes of birds or other animals to aircrafts cannot reduce the population of even endangered species, since only a limited number can be involved in a strike event (stochastic events). The loss of a limited number of animals cannot change the population status of the species.	

8. CULTURAL HERITAGE

Have new cultural heritage properties been discovered during the reporting period? [YES/NO]	**NO**

(if YES) Details provided in the table below:

Location	**Date of discovery**	**Type of discovery**	**Additional protection measures taken**

9. RESOURCES CONSUMPTION

9.1. Energy consumption

Energy consumption (monthly electric energy consumption, in Kwh)	
MONTH	**Kwh**
January	98,893.42
February	79,345.01
March	80,030.67
April	75,931.47
May	137,225.59
June	200,985.24
July	231,918.70
August	237,898.90
September	201,697.99
October	129,222.02
November	95,561.96
December	101,071.06
Total annual electric energy consumption (in Kwh)	1,669,782

9.2. Fuel consumption

Fuel consumption		
Number of FG vehicles at the airport	10	
Number of firefighting vehicles at the airport	3	
Total annual fuel consumption	Diesel (lt)	8,148.98
	Unleaded gasoline (lt)	0

9.3. Heating oil or natural gas consumption

Heating oil or natural gas consumption	
Total annual heating oil consumption (lt)	-
Total annual heating natural gas consumption (m^3)	-

9.4. Water consumption

Water consumption	
Period	***Consumption* [m^3]**
Total annual consumption	**7,000m^3***

*Estimation

10. GREENHOUSE GAS EMMISIONS & CARBON FOOTPRINT

Greenhouse gas emissions that were included in the carbon footprint calculation are the CO_2 emissions included in scope 1 & 2 of the GHG protocol:

- Scope 1: Direct GHG emissions that occur from sources that are owned and/or controlled by the airport.
- Scope 2: Indirect GHG emissions from the generation of purchased electricity, steam, heat or cooling consumed by the airport.

SOURCE FLOWS	TOTAL CO_2 EMISSIONS (t)
	2018
Direct emissions form heating fuel (scope 1)	0.0
Direct emissions from fuel used for fleet vehicles (scope 1)	14.6
Direct emissions from fuel used for firefighting vehicles (scope 1)	7.2
Direct emissions from fuel used for generators (scope 1)	1.3
Indirect emissions from electricity consumption (scope 2)	1,016.9
Total (t)	**1,040.0**
Kg CO2 /passenger	2.25

Notes:
Fraport Greece B committed to the monitoring, management and reduction of its airports carbon footprint. In order for this target to be achieved: • Direct and indirect carbon emissions from all the emission sources in the airports' boundaries are calculated and reported, based on the GHG Protocol (scope 1 & 2) • The airport is certified according to ISO 14064 regarding greenhouse gas emission by an independent certification body

11. HUMAN CONSUMPTION WATER MONITORING PROGRAM

Human consumption water quality	
Water supply (public water network or airport's boreholes)	Airport boreholes
Is sampling of the airport's water network performed? ***[YES/NO]***	YES
(if YES) Sampling frequency:	Quarterly
Summary of results: The results of the microbiological and chemical analyses show that the parameters analysed as regards the airport's water network are **within the legislative limits** defined by the Ministerial Decision Γ1 (δ)/ΓΠ οικ. 67322/ GG 3282 B/19-9-2017 regarding the quality of human consumption water.	

12. RAINWATER

RAINWATER (collection, treatment disposal and recipient)		[YES/NO]
Area	**Collection/treatment/disposal**	
Apron and manoeuvring area	Collected in drainage ditches leading to the sea	YES
Other runoffs (runway etc.)	Collected in drainage ditches leading to the sea	YES

Treatment of rainwater by oil-separator	NO

13. GROUNDWATER MONITORING PROGRAM

Groundwater quality	
Is sampling of the airport's groundwater performed? ***[YES/NO]***	YES
(if YES) Sampling frequency:	According to the frequency specified by the ETs.
Parameters analysed: pH, Conductivity, DO, TPH, BTEX, Heavy metals,	
Summary of results: Groundwater quality is monitored according to the airport's monitoring program. It is noted that the fuel handler companies monitor the quality of groundwater according to the Environmental terms and based on the data provided by them, no exceedances of the legislative limits occurred (Limits defined by the Ministerial Decision 1811 (G.G. 3322/30.12.2011) and the New Dutch List (2009)).	

14. SEWAGE TREATMENT & DISPOSAL

Sewage	
Sewage network to the municipal waste water treatment plant (WWTP)	YES
Autonomous airport's waste water treatment plant (WWTP)	NO
Short description:	
Blue water	
Collection and disposal: Collection in septic tank and disposal to the municipal sewage network.	

Waste water treatment plant description (where applicable)	
Description of characteristics and condition of the airport's WWTP including possible problems. Type and frequency of the effluent quality measurements	
Degree of treatment of airport's WWTP	N/A
Treatment method	N/A
Disposal of treated wastewater	N/A
Sludge disposal	N/A
Sampling frequency of WWTP effluent	N/A
Parameters analysed	N/A
Summary of quality of WWTP effluent	N/A