

# **Environmental Bulletin of Samos**

## **“Aristarchos of Samos” Airport (SMI)**

### **Reference year 2019**

Fraport Greece

May 2020



## Version Control

Version	Revision	Description of Revision	Date
0	0		27/05/2020



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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 (winter)	00:01 – 24:00				
Operation hours (summer)	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 (31.8.2019)			Low season (30.11.2019)	
Fraport Greece (FG) employees	22			18	
Employees of other companies	427			247	
Terminal					
➤ Total area (m <sup>2</sup> )				8,100	
Other buildings and service/storage areas					
➤ RFF (m <sup>2</sup> )				1,144	
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)		13	14	69
Environmental Management System (EMS)	(YES/NO)	YES	YES	YES

## 2. TRAFFIC DATA STATISTICS

### 2.1. Annual Traffic Data

Annual Traffic Data for the year 2019	
Overall Annual Air Traffic Movements <sup>1</sup>	6,274
Percent of increase or decrease in relation to the previous year	1.1%
Annual passenger traffic	479,975
Percent of increase or decrease in relation to the previous year	3.7%
Annual cargo transferred (tn)	232
Percent of increase or decrease in relation to the previous year	-13.61%

Aircraft types	
Prevailing aircraft types for domestic flights	
Aircraft type	No. of flights
AT45	1,436
DH8D	1,348
A319	303
AT72	220
AT75	156
AT43	136
EC35	96

<sup>1</sup> Military and training flights not included.

A320	52
SW4	20
CL60	15
Other	251
<b>Prevailing aircraft types for international flights</b>	
<b>Aircraft type</b>	<b>No. of flights</b>
B73H	679
A320	430
B738	289
B73W	150
A319	113
A20N	96
B712	52
B737	46
A32B	32
F100	32
Other	322

**2.2. High season traffic data**

<b>High season traffic data (June-September)</b>	
Highest traffic month	August
Air traffic movements during the month with highest traffic	956
Air traffic movements daily average number during the month with highest traffic	31

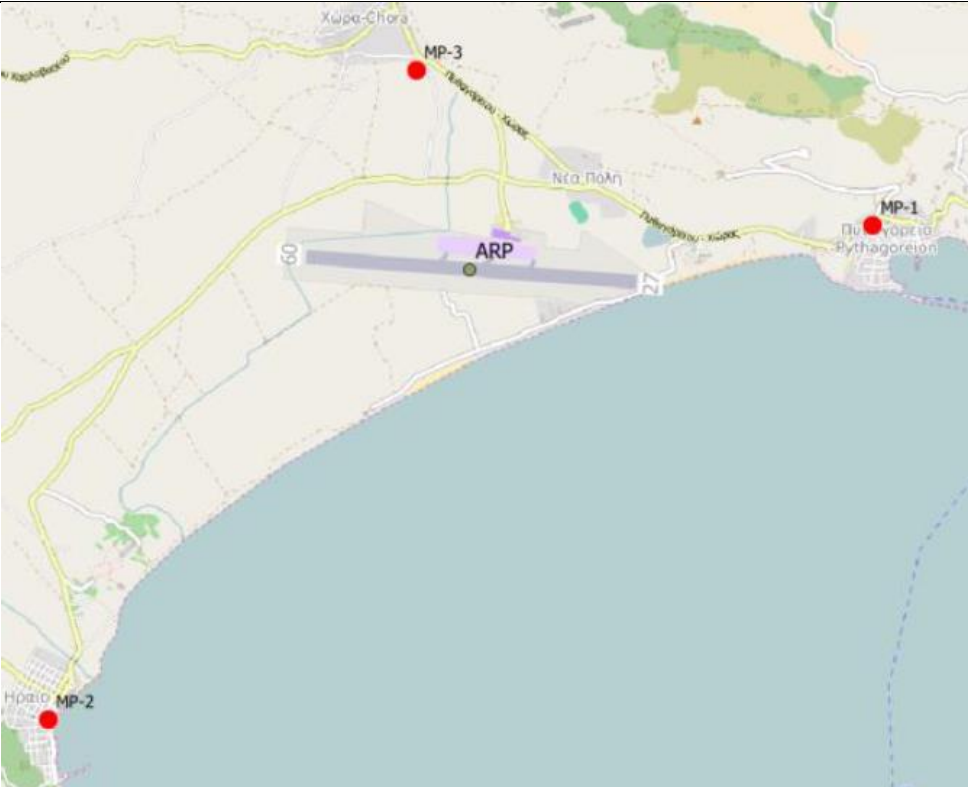
**2.3. Low season traffic data**

<b>Low season traffic data (October-May)</b>	
Lowest traffic month	February
Air traffic movements during the month with lowest traffic	254
Air traffic movements daily average number during the month with lowest traffic	9





### 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
<b>Measurement points</b>		
		
<b>Measurement points coordinates</b>	<b>Measurement points description</b>	
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 arrivals and departures to and from all runways	
<b>Measurement period</b>	11.07.2019 – 12.07.2019	
<b>Noise indicators</b>	Lden, Lnight	
<b>Summary of measurement results:</b>		
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

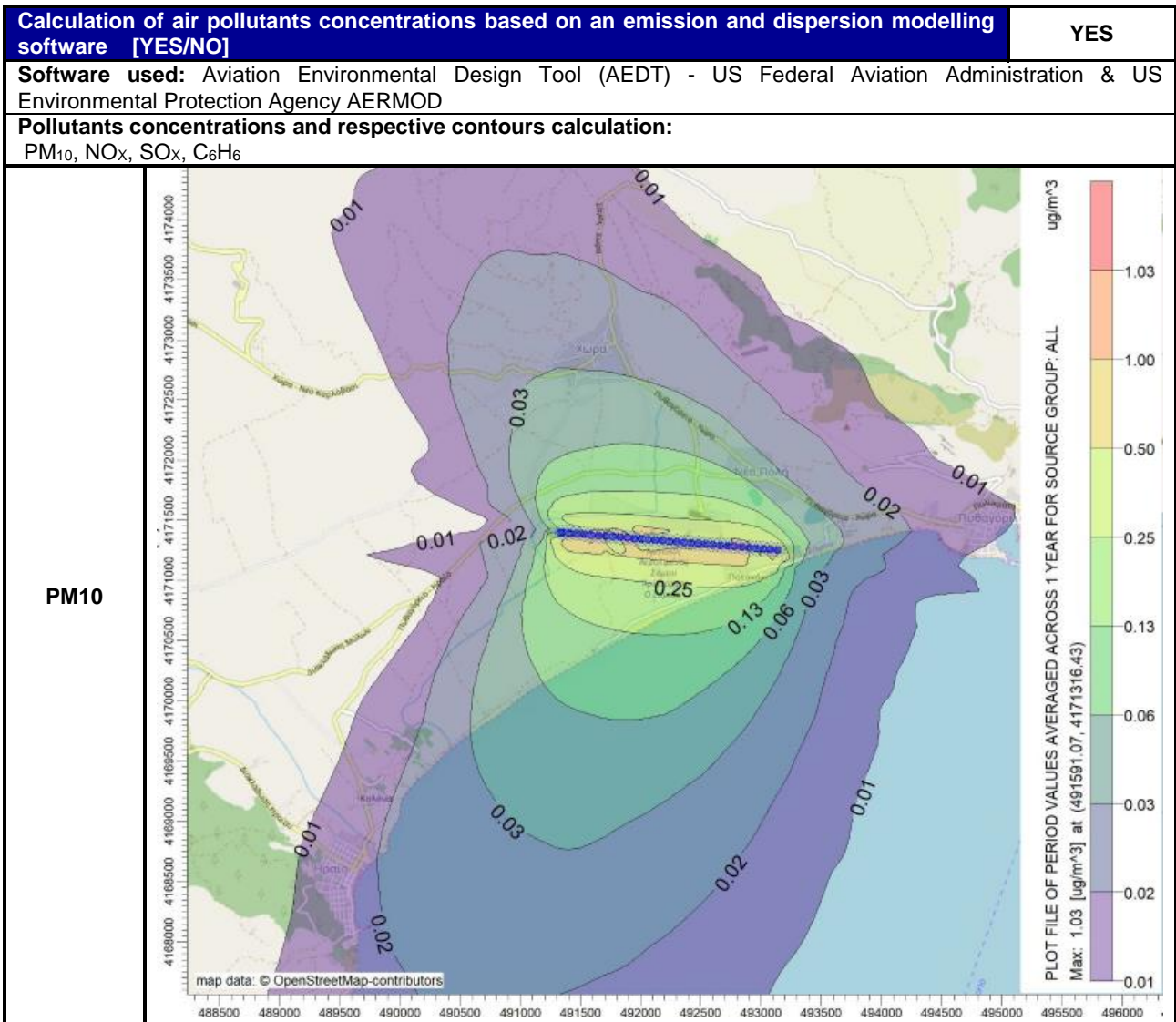
<b>Aircraft noise levels calculation based on simulation software [YES/NO]</b>	<b>YES</b>
<b>Software used:</b> IMMI Noise Prediction Software (CNOSSOS EU assessment method based on Directive 2015/996/EU)	
<b>Noise indicators and respective contours calculation:</b>	Lden, Lnight
 <p style="text-align: center;"><b>Lden</b></p>	 <p style="text-align: center;"><b>Lnight</b></p>
<b>Summary of results:</b>	
For the year 2019 no populations or buildings inside official settlement boundaries were found to be exposed to noise levels higher than the limits Lden = 70 dB(A) and Lnight = 60 dB(A).	

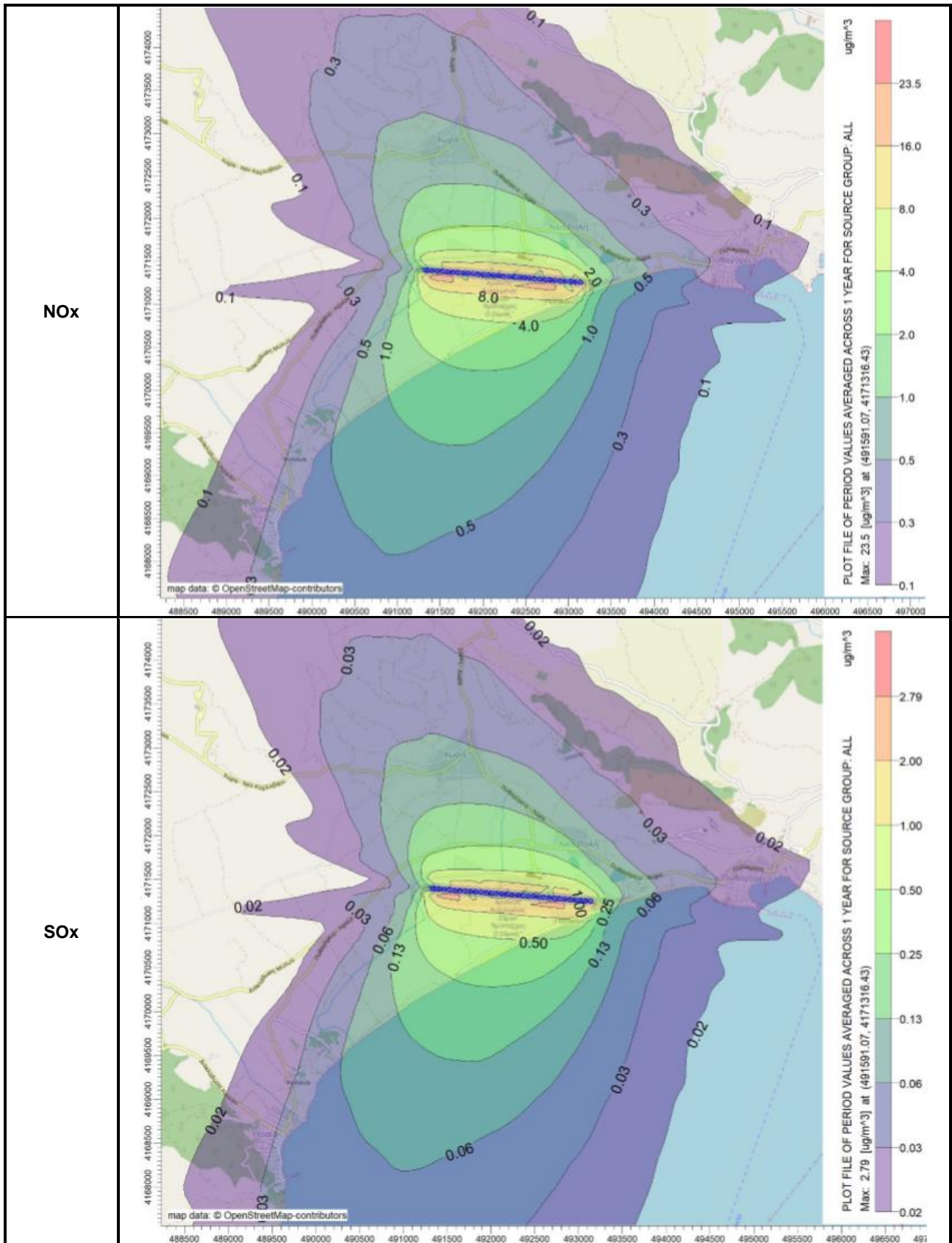
## 4. AIR QUALITY

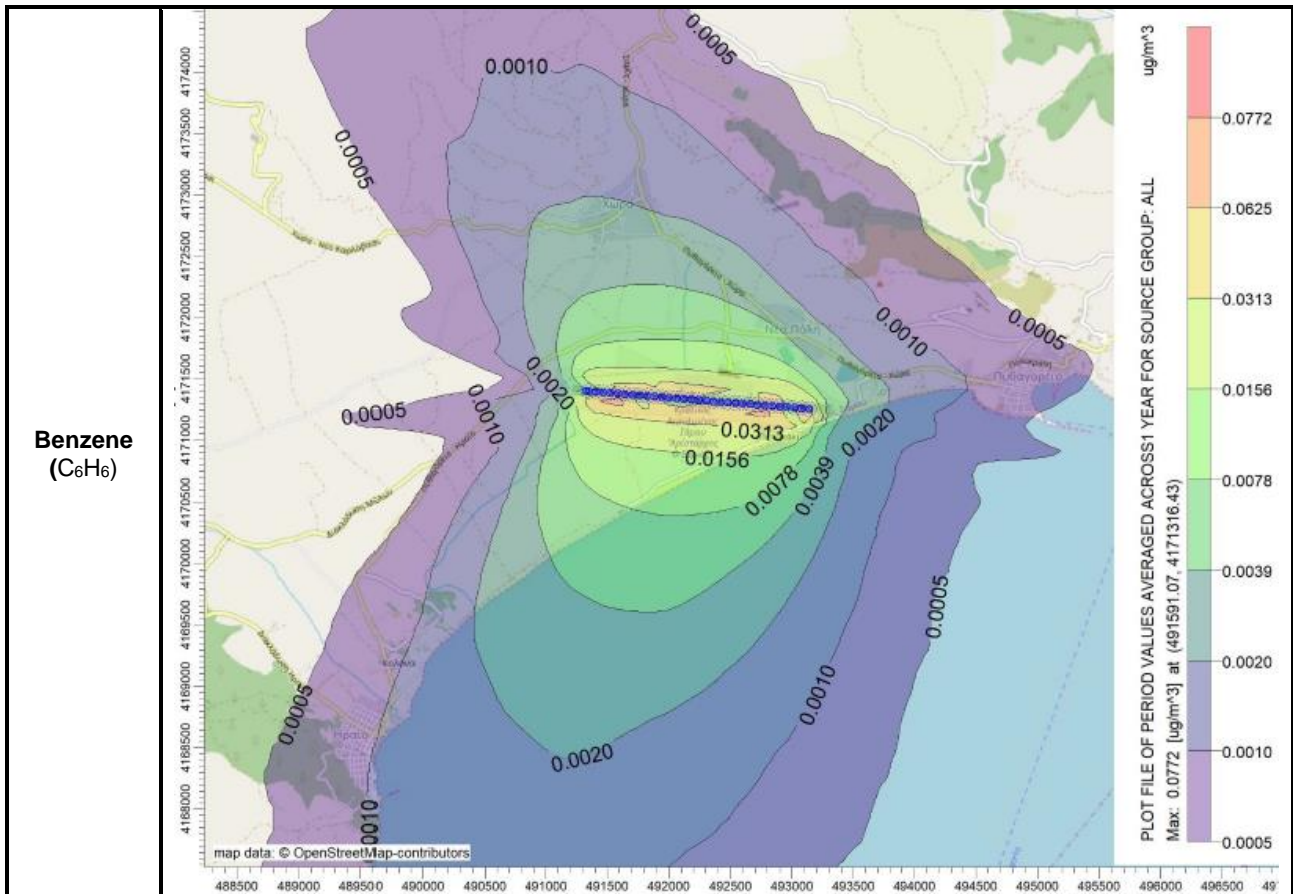
### 4.1. Air quality measurements during the reference year

<b>Have air quality measurements at the airport's surrounding area been performed during the reference year? [YES/NO]</b>		<b>NO*</b>
<b>Measurement points</b>		
N/A		
<b>Measurement points coordinates</b>	<b>Measurement points description</b>	
1) Position: --° --' --" N --° --' --" E	N/A	
2) Position:       --° --' --" N --° --' --" E	N/A	
<b>Measurement period</b>	N/A	
<b>Pollutants measured: N/A</b>		
<b>Summary of measurement results:</b>		
<p>*Fraport Greece, during the years 2018-2019, has implemented a noise &amp; air pollution monitoring program, according to the Approved Environmental Terms of the airport. The monitoring program included the implementation of special simulation tools in combination with confirmation measurements, of air pollution and noise, in representative positions around the airport.</p> <p>According to the abovementioned monitoring program, which is an annex of the approved Environmental Impact Assessment Study, and based on the results of the measurements for 2018, no air pollution measurements were programmed for the year 2019 at the airport. Instead, a computational approach with the use of air pollution simulation software was planned, the results of which are presented in paragraph 4.2. The results of the 2018 air pollution measurement are available at the respective environmental bulletin, which is published at the company's website.</p> <p>At the end of the two year period of the program, in May 2020, a Technical Evaluation Report was submitted to the Directorate for Climate Change and Air Pollution of the Ministry for Environment &amp; Energy, with proposals for the most suitable in terms of effectiveness, air pollution &amp; noise monitoring program for the years ahead.</p>		

4.2. Air pollutants emission and dispersion modelling







**Summary of results:**

Air quality is monitored according to the airport’s monitoring program.  
No exceedance of the air quality limits was observed.

**5. WASTE MANAGEMENT**

Waste management		
Waste	Collection	Management/Disposal
Recyclables (paper, plastic, metals, glass)	Separate collection by the Municipality of Samos	Disposal at material recovery facility (OEDA Samos) and transshipment for recycling
Residues (Mixed Waste) and Bulky Waste	Collection by the Municipality of Samos	Disposal in landfill (OEDA Samos)

**Σημειώσεις:**

1. Regarding the different categories of the MSW (recyclables, mixed waste), Airport Users handle their waste autonomously. The implementation of a central system by Fraport Greece is expected.
2. Regarding the “alternative management” waste categories (Waste lubricant oil WLO, WEEE, etc.):
  - i. Waste Lubricant Oil (WLO): Collection and management by authorized collector “CYTOP S.A.”
  - ii. Waste Electrical & Electronic Equipment (WEEE): Collection and management by alternative management

Waste management		
Waste	Collection	Management/Disposal
system "Appliances Recycling S.A." iii. Accumulators: Collection and management by alternative management system "Re-Battery S.A." iv. Small batteries: Collection and management by alternative management system "AFIS S.A." v. Used tires: Collection and management by alternative management system "ECOELASTIKA S.A." 3. The total quantities of the produced waste by category resulting from all activities of the airport are recorded by Fraport Greece A 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	
<b>Flora</b>	
Are there protected zones of vegetation/habitats in the broader airport area? [YES/NO]	NO
(If YES) Short description:	
<b>Fauna</b>	
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	
<b>Extent of the problem</b> (animal species):	<b>Strikes (%)</b>
<i>Larus michahellis</i> (Yellow-legged gull)	50%
Not identified*	30%
<i>Hirundo rustica</i> (Barn swallow)	10%
<i>Corvus cornix</i> (Hooded crow)	10%
<b>Adopted measures :</b>	
<ul style="list-style-type: none"> <li>• Drainage ditches are periodically checked and if necessary cleaned, to ensure efficient water run-off and, thus, reducing the attractiveness of the airside to the wildlife</li> <li>• Systematic grass cutting at the airside</li> <li>• Fence maintenance</li> <li>• Trapping of mammals (mainly stray cats and dogs) that may be found at the manoeuvring area by the use of</li> </ul>	

<p>trap and under the permit received by the ministry of Environment &amp; Energy “Monitoring and trapping birds and mammals population at the 14 regional airports operated by Fraport Greece” (Permit: 165654/142, 12/2/2018)</p> <ul style="list-style-type: none"> <li>• Systematic monitoring and census of bird species populations on and off-airport (in a distance of 13km from the airport) and mapping of their habitat and the areas that are attractive to birds</li> <li>• Seminar awareness video on the identification and safe removal of reptiles and information about the snake species at Samos, under the collaboration with the Lalitsa Non-Profit Association</li> <li>• Awareness video on the safe handling of stray dogs</li> </ul> <p><b>Reference year summary results:</b>                  Hellenic Civil Aviation Authority receives annual reports referring to the risk assessment of the wildlife hazard as well as to the wildlife hazard management at the 12 regional airports operating by Fraport Greece. Aktion Airport and Chania Airport “Ioannis Daskalogiannis” are excluded, in accordance with the Concession Agreement, Annex 20, paragraph 6.3.3 &amp; 6.3.4.</p>
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\*“Not identified” refers to birdstrikes evidence (e.g. blood or part of feathers) that does not allow the bird species identification

## 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
Total annual electric energy consumption (in Kwh)	1,803,822

### 9.2. Fuel consumption

Fuel consumption		
Number of FG vehicles at the airport	12	
Number of firefighting vehicles at the airport	4	
Total annual fuel consumption	Diesel (lt)	8.465
	Unleaded gasoline (lt)	-



### 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 <sup>3</sup> )	N/A

\*Heating and cooling is achieved via heat pumps

### 9.4. Water consumption

Water consumption	
Period	Consumption [m <sup>3</sup> ]
Total annual consumption	5.000*

\*Estimation

## 10. GREENHOUSE GAS EMISSIONS & CARBON FOOTPRINT

Greenhouse gas emissions that were included in the carbon footprint calculation are the CO<sub>2</sub> 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 <sub>2</sub> EMISSIONS (t)
	2019
Direct emissions from heating fuel (scope 1)	0.0
Direct emissions from fuel used for fleet vehicles (scope 1)	15.5
Direct emissions from fuel used for firefighting vehicles (scope 1)	7.1
Direct emissions from fuel used for generators (scope 1)	9.6
Indirect emissions from electricity consumption (scope 2)	1,150.8
<b>Total (t)</b>	<b>1,183.0</b>
<b>Kg CO<sub>2</sub> /passenger</b>	<b>2.46</b>

#### 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 was certified during the reference year 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)	Municipality of Samos network
Is sampling of the airport's water network performed? <b>[YES/NO]</b>	YES
<b>(if YES)</b> Sampling frequency:	Quarterly
<b>Summary of results:</b> The results of the microbiological and chemical analyses show that the parameters analysed as regards the airport's water network are <b>within the legislative limits</b> 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*
Rainwater quality		
Is sampling of the airport's rainwater performed? <b>[YES/NO]</b>		YES
<b>(if YES)</b> Sampling frequency::		Yearly
<b>Parameters analyzed:</b> pH, conductivity, TSS, DO, NO <sub>3</sub> , NO <sub>2</sub> , Oil & grease, BOD, COD, Total Petroleum Hydrocarbons (TPH), PAHs, BTEX, Heavy metals, PCBs, Detergents		
<b>Summary of results:</b> Surface rainwater quality is monitored according to the airport's monitoring program. Due to the absence of designated recipients and relevant national quality limits for surface rainwater, the Environmental Health & Safety Guidelines of the International Finance Corporation (IFC) are adopted. According to FG's analyses results and based on the abovementioned specifications, the airport's rainwater environmental condition is adequate and no further treatment measure is necessary.		

### 13. GROUNDWATER MONITORING PROGRAM

Groundwater quality	
Is sampling of the airport's groundwater performed? [YES/NO]	YES
(if YES) Sampling frequency::	Yearly
<b>Parameters analyzed:</b> pH, conductivity, TSS, DO, NO <sub>3</sub> , NO <sub>2</sub> , Oil & grease, BOD, COD, Total Petroleum Hydrocarbons (TPH), PAHs, BTEX, Heavy metals, PCBs, Detergents	
<b>Summary of results:</b> Groundwater quality is monitored according to the airport's monitoring program. In addition, the fuel handling companies monitor the quality of groundwater according to the environmental terms. According to FG's analyses results,, the environmental monitoring reports of the fuel handlers, and based on the New Dutch List (2009) which is adopted in the absence of relevant national specifications/limits, the environmental condition of the ground water is found adequate and no decontamination measures are necessary.	

### 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
<b>Short description:</b>	
<b>Blue water</b>	
<b>Collection and disposal:</b> Collection in septic tank and disposal to the municipal sewage network.	

Waste water treatment plant description (where applicable)	
<i>Description of characteristics and condition of the airport's WWTP including possible problems. Type and frequency of the effluent quality measurements</i>	
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