

ENVIRONMENTAL BULLETIN OF SAMOS “ARISTARCHOS OF SAMOS” AIRPORT (SMI)

Reference year 2022

Fraport Regional Airports of Greece B S.A.

Issue year: 2023

**Environmental Bulletin of Samos Airport
“Aristarchos of Samos” (SMI) - 2022**



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1. INTRODUCTION

1.1. Location

“Aristarchos of Samos” 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.

1.2. 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.

1.3. Environmental licensing

Approved Environmental Terms	
E.T. Decision Reference number	106454/14.03.2000
E.T. Amendment Decision Reference Number	131852/27.10.2010
	3704/12.02.2018
	24437/1573/14.03.2022
	74752/5077/18.07.2022

1.4. Airport Basic Data

Airport name IATA / ICAO	SMI / LGSM
Airport location – Airport Reference Point (ARP)	Latitude: 37° 41' 21" N Longitude: 26° 54' 44" E
Altitude	5.74 m
Number of runways	1
Operation hours (summer & winter)	00:00 – 23:59

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 (31.08.2022)			Low season (30.11.2022)		
Fraport Greece (FG) employees	25			22		
Employees of other companies	307			245		

Terminal

➤ Total area (m ²)	9.473
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Other buildings and service/storage areas

➤ RFF Station (m ²)	1.144
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Parking Areas

Car parking spaces	192
Bus parking spaces	14
Taxi parking spaces	36

1.5. Airport facilities

1.5.1. Fuel Handlers

Number of fuel handler companies

Number of fuel handler companies operating at the Airport	2
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Installations inside the airport	EKO	GISSCO	HAFCO
Environmental Management System (EMS)	YES	YES	Not operating at the airport

1.5.2. Ground Handlers

Number of ground handler companies

Number of ground handler companies operating at the Airport	3
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Installations inside the airport	SKYSERV	SWISSPORT	GOLDAIR
Environmental Management System (EMS)	YES	YES	YES

2. TRAFFIC DATA STATISTICS

2.1. Annual Traffic Data

Annual Traffic Data for the year 2022	
Overall Annual Air Traffic Movements ¹	5.700
Percent of increase or decrease in relation to the previous year	23,2%
Annual passenger traffic	453.264
Percent of increase or decrease in relation to the previous year	67,7%
Annual cargo transferred (tn)	132
Percent of increase or decrease in relation to the previous year	-15,4%

Aircraft types	
Prevailing aircraft types for domestic flights	
Aircraft type	No. of flights
AT76	1.176
AT45	624
DH8D	612
AT72	598
AT75	244
EC35	74
A320	52
AT46	48
A32A	23
A319	18
Other	217
Prevailing aircraft types for international flights	
Aircraft type	No. of flights
B73H	552
A320	516
7M8	284
A20N	138
B738	124
A32A	101
A319	38
E195	34
290	18
A321	16
Other	177

¹ Military and training flights not included.

2.2. High season traffic data

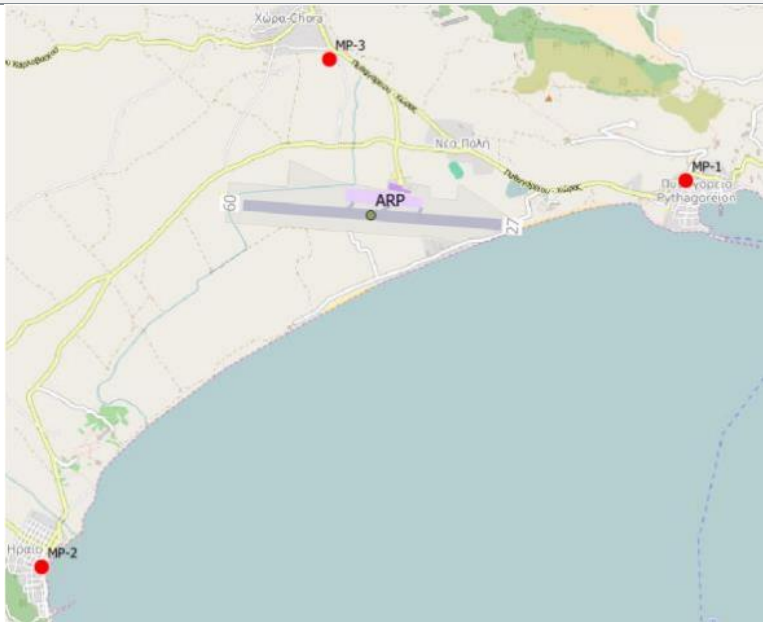
High season traffic data (June-September)	
Highest traffic month	August
Air traffic movements during the month with highest traffic	917
Air traffic movements daily average number during the month with highest traffic	31

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	220
Air traffic movements daily average number during the month with lowest traffic	7

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
Measurement points		
		
Measurement points coordinates	Measurement points description	
Θέση 1: 37° 41' 30" N 26° 56' 29" E	Located in Pythagoreio, east of the runway on the roof of a private building. Affected by arrivals RWY 27 and departures RWY 09.	
Θέση 2: 37° 39' 48" N 26° 52' 54" E	Located in Ireo, southwest of the runway on the roof of a house. Affected by arrivals RWY 09 and departures RWY 27.	
Θέση 3: 37° 42' 02" N 26° 54' 30" E	Located southeast of Chora, north of the runway on the balcony of a public building. Affected by all procedures in both directions	
Measurement period	24.07.2022 – 25.07.2022	
Noise indicators	L _{den} & L _{night}	

Summary of measurement results:

Noise levels are monitored according to the airport’s monitoring program and new approved environmental terms. No exceedance of noise indicators levels L_{den}=70 dB(A) and L_{night}=60 dB(A) was observed.

3.2. Noise levels calculation based on noise simulation software

Aircraft noise levels calculation based on noise simulation software	YES
Software used: IMMI Noise Prediction Software (evaluation method CNOSSOS-EU according to JMD KYA ΥΠΕΝ/ΔΚΑΠΑ/13757/255/Β/16.02.2022)	
Noise indicators and respective contours calculation: L_{den} , L_{night}	
Noise contours:	
 <p style="text-align: center;">L_{den}</p>	 <p style="text-align: center;">L_{night}</p>

Summary of results:

For the year 2022 no buildings inside official settlement boundaries were found to be exposed to noise levels higher than the limits $L_{den}=70$ dB(A) and $L_{night}=60$ dB(A).

4. AIR QUALITY

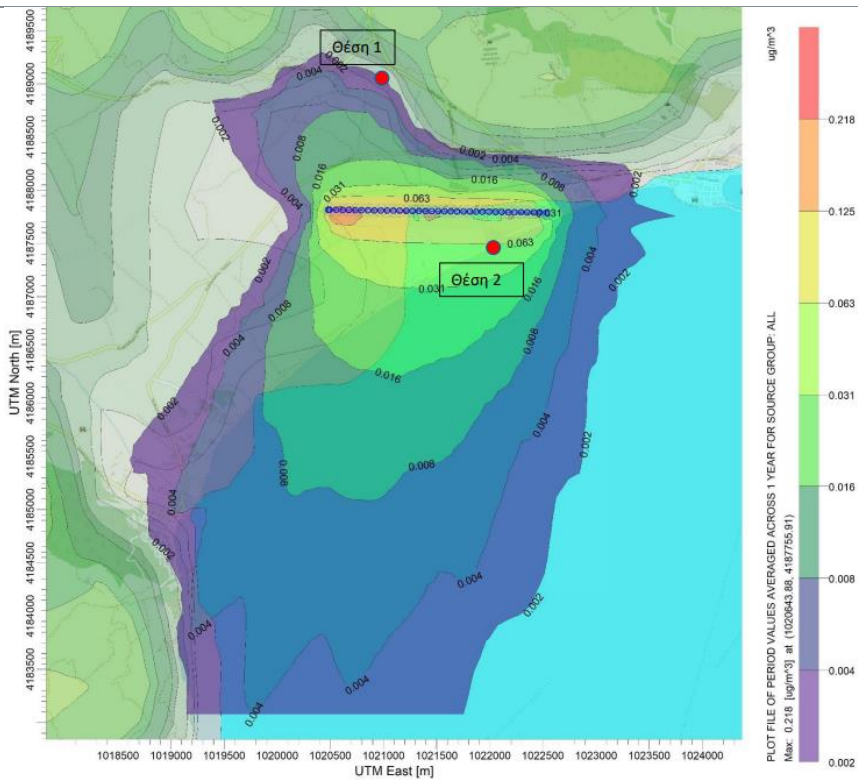
4.1. Air quality measurements during the reference year

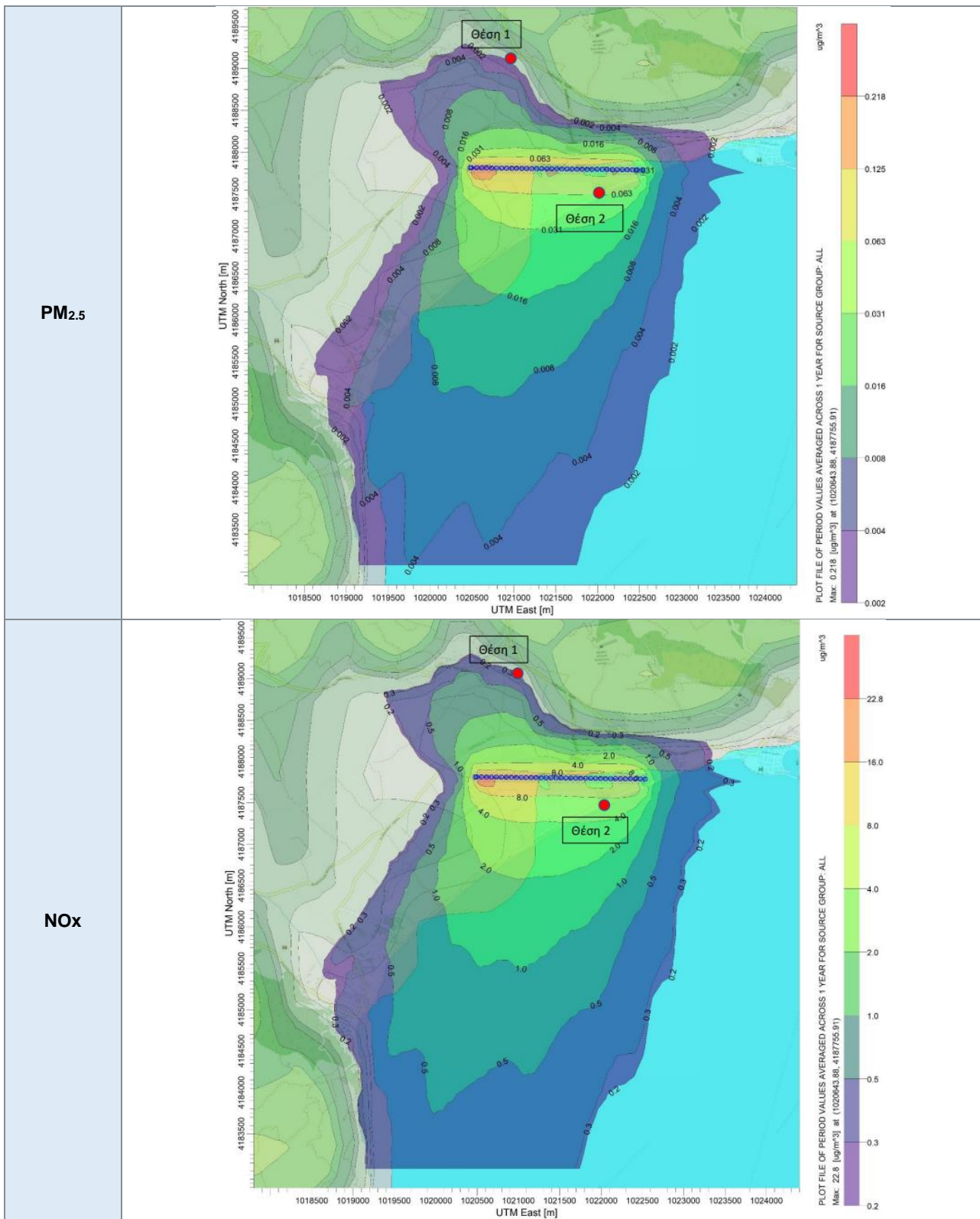
Have air quality measurements at the airport’s surrounding area been performed during the reference year?		YES
Measurement points		
		
Measurement points	Measurement points description	
Point 1	Parking area, about 2.2 km north of the airport	
Point 2	Parking area at Potokaki settlement	
Measurement period:	11.10.2022 - 26.10.2022	
Pollutants measured:	CO, C ₆ H ₆ , NO, NO ₂ , O ₃ , PM ₁₀ , PM _{2.5} και SO ₂	

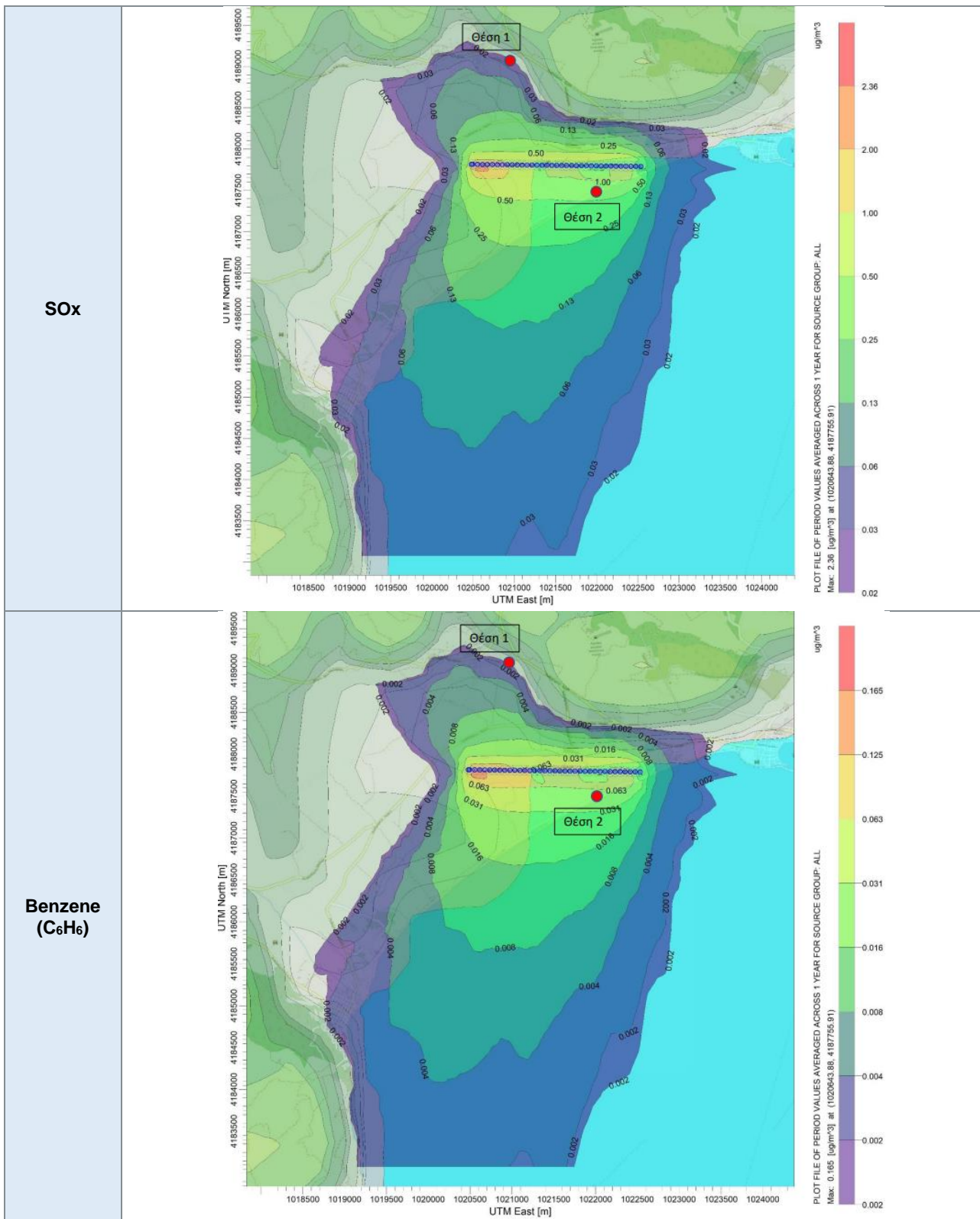
Summary of measurement results:

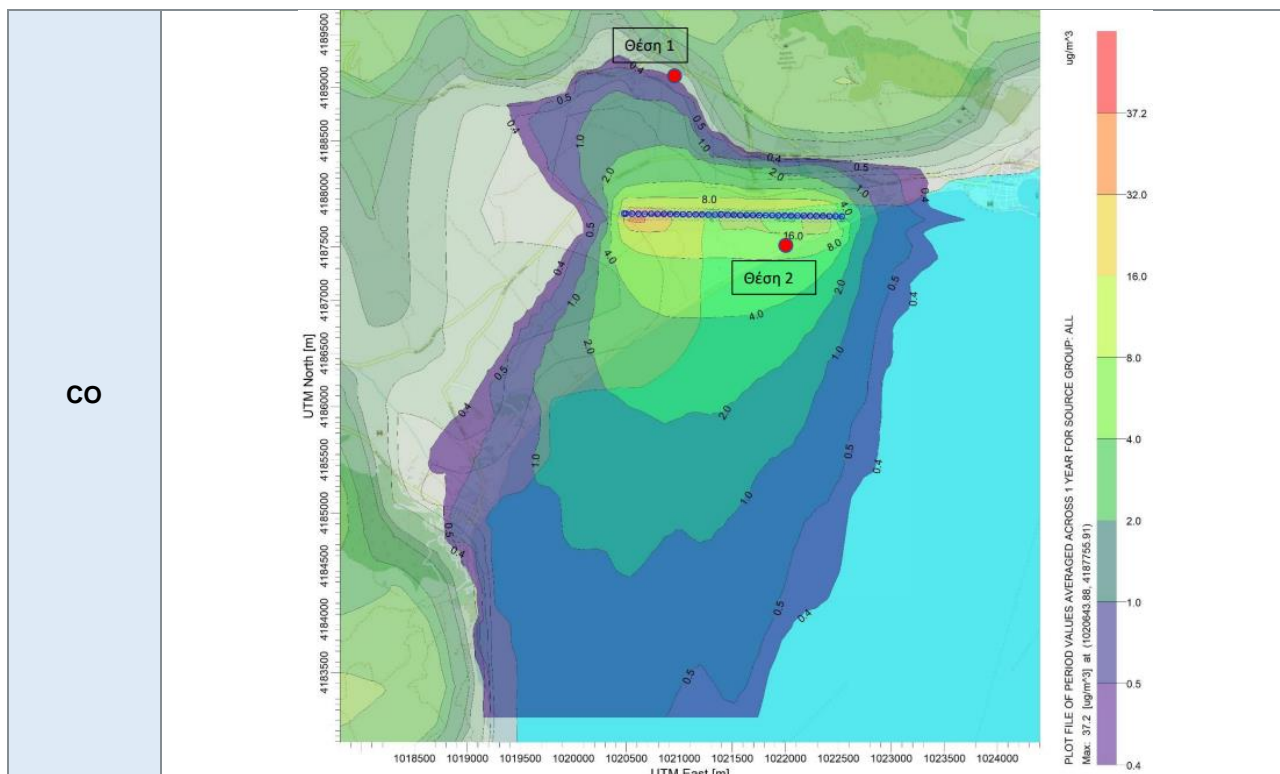
Air quality is monitored according to the airport’s monitoring program and new environmental terms. No exceedance of the air quality limits was observed,

4.2. Air pollutants emission and dispersion modelling

Calculation of air pollutants concentrations based on an emission and dispersion modelling software		YES
Software used: Aviation Environmental Design Tool (AEDT) - US Federal Aviation Administration & US Environmental Protection Agency AERMOD		
Pollutants concentrations and respective contours calculation: PM ₁₀ , PM _{2,5} , NO _x , SO _x , C ₆ H ₆ , CO		
PM₁₀		







Summary of results:

Air quality is monitored according to the airport's monitoring program and new environmental terms. No exceedance of the air quality limits was observed,

5. 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)

Notes:

1. Regarding the different categories of the MSW (recyclables, mixed waste, bulky waste), the Airport Users handle their waste together with Fraport Greece B (central management).
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 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 hazardous waste further to the above-mentioned and produced at the airport, are managed by licensed private companies which have a contract with Fraport Greece B, according to the provisions of the legislation in force.
4. The total quantities of the produced waste by category resulting from all activities of the airport, the collectors and final recipients, are recorded by Fraport Greece B and submitted in the Electronic Waste Registry of the Ministry for Environment and Energy via the Annual Waste Producer Report according to the provisions of the legislation in force.

6. ECOSYSTEM AROUND THE AIRPORT

6.1. Flora-Fauna

Flora	
Are there protected zones of vegetation/habitats in the broader airport area?	YES
<p>(if YES) Short description: Samos Airport “Aristarchos of Samos” is near to the Natura 2000 site:</p> <ul style="list-style-type: none"> • GR4120001 Samos Paralia Alyki (Area: 307.07ha) 	
Fauna	
Are there protected species of fauna/birds in the broader airport area?	YES
<p>(if YES) Short description: Samos Airport “Aristarchos of Samos” is close to the Important Bird Area GR146: Psili Ammos lagoon (Area:182.93ha). The protected bird species that have been observed at Samos airport since April 2017 are presented below: Black-crowned night heron (<i>Nycticorax nycticorax</i>), Black stork (<i>Ciconia nigra</i>), Eurasian bittern (<i>Botaurus stellaris</i>), Eurasian curlew (<i>Numenius arquata</i>), Eurasian skylark (<i>Alauda arvensis</i>), European roller (<i>Coracias garrulous</i>), European shag (<i>Phalacrocorax aristotelis</i>), European turtle-dove (<i>Streptopelia turtur</i>), Garganey (<i>Anas querquedula</i>), Glossy ibis (<i>Plegadis falcinellus</i>), Great egret (<i>Casmerodius albus</i>), Lesser grey shrike (<i>Lanius minor</i>), Marsh harrier (<i>Circus aeruginosus</i>), Montagu’s harrier (<i>Circus pygargus</i>), Pallid harrier (<i>Circus macrourus</i>), Purple heron (<i>Ardea purpurea</i>), Ruddy shelduck (<i>Tadorna ferruginea</i>), Short-toed snake eagle (<i>Circaetus gallicus</i>), Spur-winged lapwing (<i>Vanellus spinosus</i>), Squacco heron (<i>Ardeola ralloides</i>) Other protected animal species observed at Samos airport: <i>Golden Jackal (Canis aureus)</i>.</p>	

7. WILDLIFE HAZARD MANAGEMENT

Wildlife strikes and wildlife hazard management measures	
Wildlife species that suffered a strike	Strikes (%)
Small passerines	50%
Gulls	33%
Corvids	17%
Wildlife strike risk mitigation measures:	
<p>The presence and behavior of wildlife species at Samos airport is monitored in regular intervals, daily, from dawn to dusk. Some of the wildlife control methods applied at Samos airport are: distress calls (bioacoustics), digital sounds, anti-bird laser, etc. Preventive long-term actions that are mainly related to habitat management measures (e.g. grass cutting, water body management) are also taken to further reduce the presence of species constituting a risk to flight safety. In addition, a NOTAM is published and regularly updated.</p>	

8. CULTURAL HERITAGE

Have new cultural heritage properties been discovered during the reporting period?	NO*
<i>(if YES)</i> 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)	
Total annual electric energy consumption (in Kwh)	1.449.366,28

9.2. Fuel consumption

Fuel consumption		
Number of FG vehicles at the airport	12	
Total annual fuel consumption	Diesel (lt)	9.135,82
	Unleaded gasoline (lt)	462,08

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)	N/A

*Heating and air conditioning is performed via heat pumps

9.4. Fuel consumption for generator

Fuel consumption	
Total annual consumption (lt)	19,70

9.5. Water consumption

Water consumption	
Total annual consumption (m ³)	-

No available data from the Municipality of Samos.

10. GREENHOUSE GAS EMISSIONS & CARBON FOOTPRINT

Greenhouse gas emissions that were included in the carbon footprint calculation are the CO₂ 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)
	2022
Direct emissions form heating fuel (scope 1)	0,0
Direct emissions from fuel used for fleet vehicles (scope 1)	25,50
Direct emissions from fuel used for generators (scope 1)	0,05
Indirect emissions from electricity consumption (scope 2)	608,76
Total (t)	634,3
Kg CO₂ /passenger	1,40

Notes:

Fraport Greece B is 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 ACA (Airport Carbon Accreditation), Level-1

11. HUMAN COMSUMPTION 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?	YES
(if YES) Sampling frequency:	Quarterly
<p>Summary of results: The results of the microbiological and chemical analyses show that the parameters analyzed as regards the airport's water network are not 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, as there are occasional elevated concentrations of Arsenic (As)..</p>	

12. RAINWATER

RAINWATER (collection, treatment disposal and recipient)		
Area	Collection/treatment/disposal	[YES/NO]
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?	YES
(if YES) Sampling frequency:	Twice a year
Parameters analyzed: pH, conductivity, TSS, DO, NO ₃ , NO ₂ , Oil & grease, BOD, COD, Total Petroleum Hydrocarbons (TPH), PAHs, BTEX, Heavy metals, PCBs, Detergents	
Summary of results:	
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. For the year 2022, the monitoring program was performed with one set of sampling. The results are satisfactory and there is no presence of pollution.	

13. GROUNDWATER AND/OR SOIL AND/OR SOIL GAS MONITORING

Groundwater and/or soil and/or soil gas quality	
Is sampling of the airport's groundwater and/or soil and/or soil gas performed?	YES
(if YES) Sampling frequency:	Yearly
Parameters analyzed: TPH, BTEX, MTBE (groundwater) and Volatile hydrocarbons, aliphatic, aromatic and chlorinated (soil gas)	
Summary of results:	
Groundwater quality is monitored according to the airport's monitoring program. Groundwater monitoring for 2022 was not performed. According to the approved environmental terms, monitoring of groundwater and air from the Fuel Handlers is not foreseen for the year 2022.	

14. SEWAGE TREATMENT AND DISPOSAL

Sewage	
Sewage network to the municipal waste water treatment plant (WWTP)	YES
Autonomous airport’s waste water treatment plant (WWTP)	NO

Blue water
Collection and disposal: Collection in watertight 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 analyzed	N/A
Summary of quality of WWTP effluent	N/A