

# **ENVIRONMENTAL BULLETIN OF SKIATHOS “ALEXANDROS PAPADIAMANTIS” AIRPORT (JSI)**

## **Reference year 2022**

Fraport Regional Airports of Greece B S.A.

**Issue year: 2023**

**Environmental Bulletin of Skiathos Airport  
“Alexandros Papadiamantis” (JSI) - 2022**



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## 1. INTRODUCTION

### 1.1. Location

The airport of Skiathos with IATA code JSI has been operating since 1972 and is located at approximately 1km (north-east) from the town of Skiathos and at a very short distance of approximately 20m from the coastline of the island.

### 1.2. Administration

The airport administratively belongs to the Municipality of Skiathos, of the Regional Unit of Sporades, Region of Thessaly

### 1.3. Environmental licensing

Approved Environmental Terms	
<b>E.T. Decision Reference number</b>	68597/24.06.1999
<b>E.T. Amendment Decision Reference Number</b>	106193/11.07.2008
	120306/11.01.2010
	37970/22.12.2017
	5778/13.03.2018
	6306/20.03.2018
	116025/7666/07.11.2022

### 1.4. Airport Basic Data

<b>Airport name IATA / ICAO</b>	JSI / LGSK
<b>Airport location – Airport Reference Point (ARP)</b>	Latitude: 39° 10' 39" N Longitude: 23° 30' 13" E
<b>Altitude</b>	16.36m
<b>Number of runways</b>	1
<b>Operation hours (summer)</b>	Monday / Tuesday / Wednesday / Thursday / Saturday / Sunday 07:00 – 23:00 Friday 06:00 – 22:00
<b>Operation hours (winter)</b>	Monday / Tuesday / Friday / Saturday 14:00 – 18:00 Thursday 08:00 – 12:00 Wednesday / Sunday CLOSED

Runways	Length/Width			Code	
Runway	1,628m x 30m			02/20	
Full length of parallel taxiway	-				
Number of taxiways	3				
Apron capacity	A	B	C	D	E
	-	-	3	1	-

<b>Employees</b>	<b>High season (31.08.2022)</b>	<b>Low season (30.11.2022)</b>
Fraport Greece (FG) employees	24	18
Employees of other companies	258	143

<b>Terminal</b>	
➤ Total area (m <sup>2</sup> )	9.526

<b>Other buildings and service/storage areas</b>	
➤ RFF Station (m <sup>2</sup> )	1.144

<b>Parking Areas</b>	
Car parking spaces	85
Bus parking spaces	12
Taxi parking spaces	20

## 1.5. Airport facilities

### 1.5.1. Fuel Handlers

<b>Number of fuel handler companies</b>	
Number of fuel handler companies operating at the Airport	1

<b>Installations inside the airport</b>	<b>EKO</b>	<b>GISSCO</b>	<b>HAFCO</b>
Environmental Management System (EMS)	YES	Not operating at the airport	Not operating at the airport

### 1.5.2. Ground Handlers

<b>Number of ground handler companies</b>	
Number of ground handler companies operating at the Airport	3

<b>Installations inside the airport</b>	<b>SKYSERV</b>	<b>SWISSPORT</b>	<b>GOLDAIR</b>
Environmental Management System (EMS)	YES	YES	YES

## 2. TRAFFIC DATA STATISTICS

### 2.1. Annual Traffic Data

<b>Annual Traffic Data for the year 2022</b>	
Overall Annual Air Traffic Movements <sup>1</sup>	4.843
Percent of increase or decrease in relation to the previous year	63,0%
Annual passenger traffic	511.613
Percent of increase or decrease in relation to the previous year	148,3%
Annual cargo transferred (tn)	0
Percent of increase or decrease in relation to the previous year	-

<b>Aircraft types</b>	
<b>Prevailing aircraft types for domestic flights</b>	
<b>Aircraft type</b>	<b>No. of flights</b>
AT76	576
AT46	206
AT72	90
AT75	50
DH8D	44
AT45	18
BE20	16
PA2	16
EC35	14
A109	12
Other	130
<b>Prevailing aircraft types for international flights</b>	
<b>Aircraft type</b>	<b>No. of flights</b>
B73H	990
A320	574
B738	468
7M8	258
A20N	220
A319	126
A32B	104
A321	92
E190	84
A32A	82
Other	673

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

## 2.2. High season traffic data

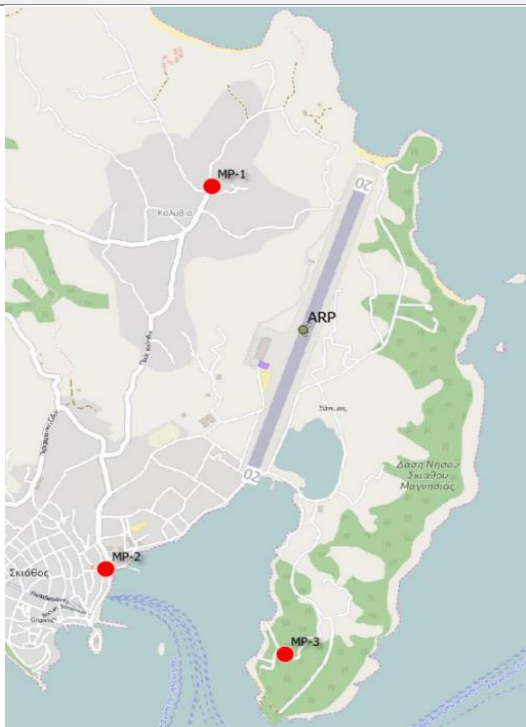
<b>High season traffic data (June-September)</b>	
Highest traffic month	August
Air traffic movements during the month with highest traffic	1.187
Air traffic movements daily average number during the month with highest traffic	38

## 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	34
Air traffic movements daily average number during the month with lowest traffic	1



### 3. AIRCRAFT NOISE

#### 3.1. Noise measurements during the reference year

<b>Have noise measurements at the airport’s surrounding area been performed during the reference year?</b>		<b>YES</b>
<b>Measurement points</b>		
		
<b>Measurement points coordinates</b>		<b>Measurement points description</b>
MP-1: 39° 11' 06" N 23° 29' 53" E		Located in Kalivia, northwest of the runway on the roof of a tavern. Affected by arrivals RWY 20 and departures RW 02.
MP-2: 39° 09' 51 " N 23° 29' 30 " E		Located in a coastal road, southwest of the runway on a balcony of a private building very close to the harbour. Affected by departures RWY 20 and arrivals RWY 02.
MP-3: 39° 09' 38" N 23° 30' 09" E		Located on the roof of a hotel on the peninsula southeast of the runway. Affected by departures RWY 20 and arrivals RWY 02.
<b>Measurement period</b>		01.07.2022-02.07.2022
<b>Noise indicators</b>		L <sub>den</sub> , L <sub>night</sub>
<b>Summary of measurement results:</b>		
Noise levels are monitored according to the airport’s monitoring program and new approved environmental terms. No exceedance of the noise indicators levels L <sub>den</sub> = 70 dB(A) and L <sub>night</sub> = 60 dB(A) was observed.		



**3.2. Noise levels calculation based on noise simulation software**

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

**Summary of results:**

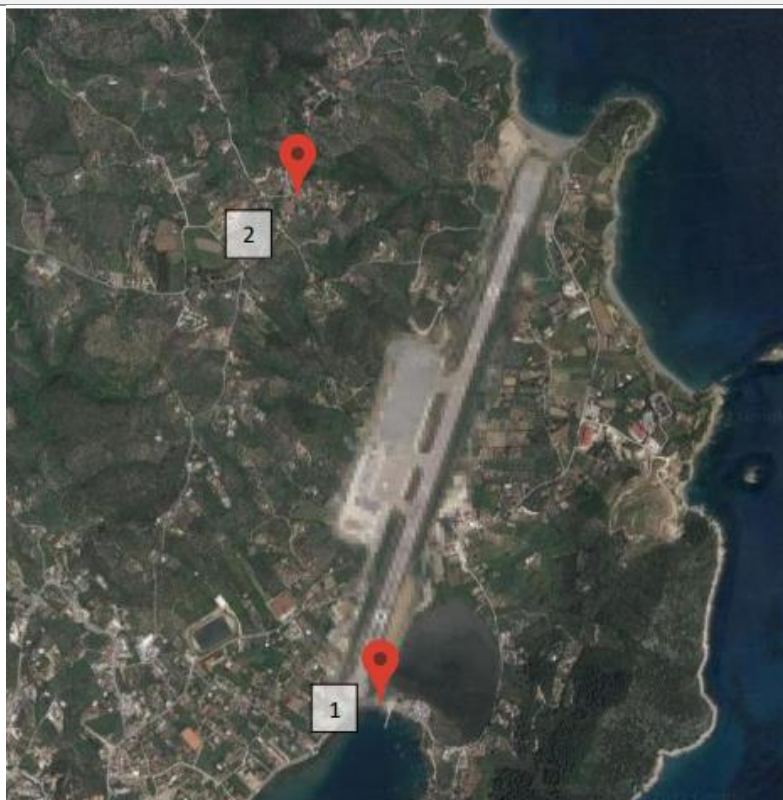
For the year 2022 no buildings inside official settlement boundaries were found to be exposed to noise levels higher than the limits  $L_{den}=70$  dB(A) and  $L_{night}=60$  dB(A).

## 4. AIR QUALITY

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

<b>Have air quality measurements at the airport’s surrounding area been performed during the reference year?</b>	<b>YES</b>
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#### Measurement points

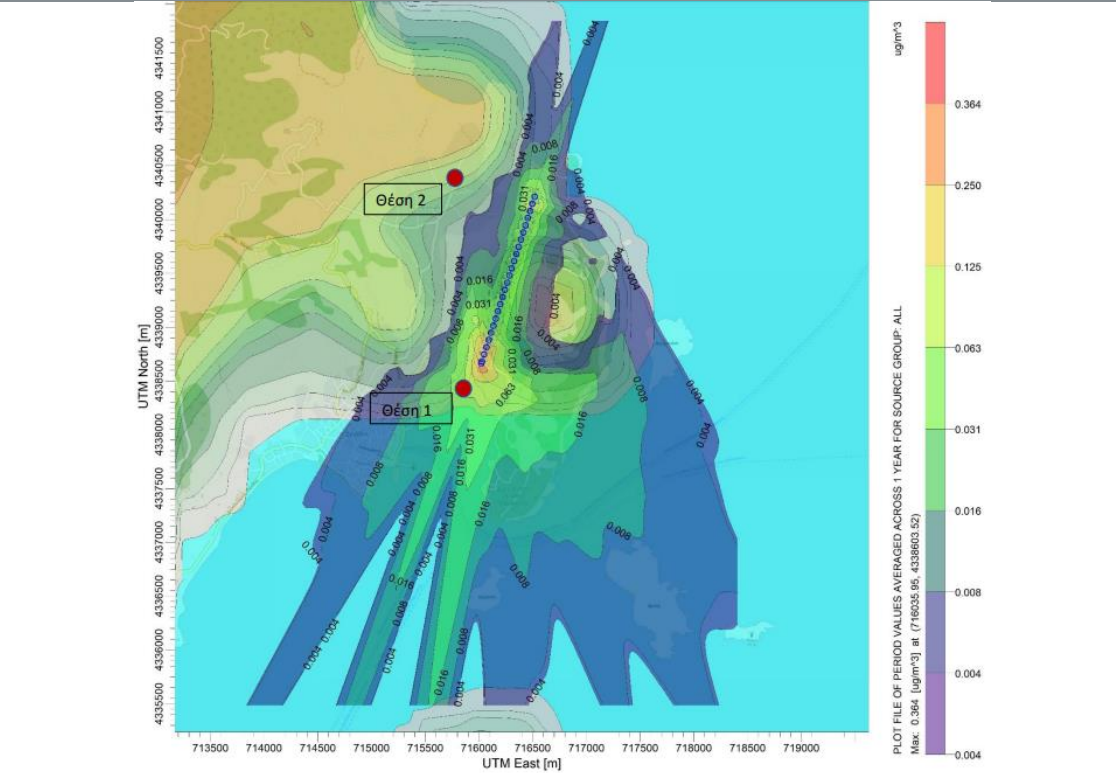


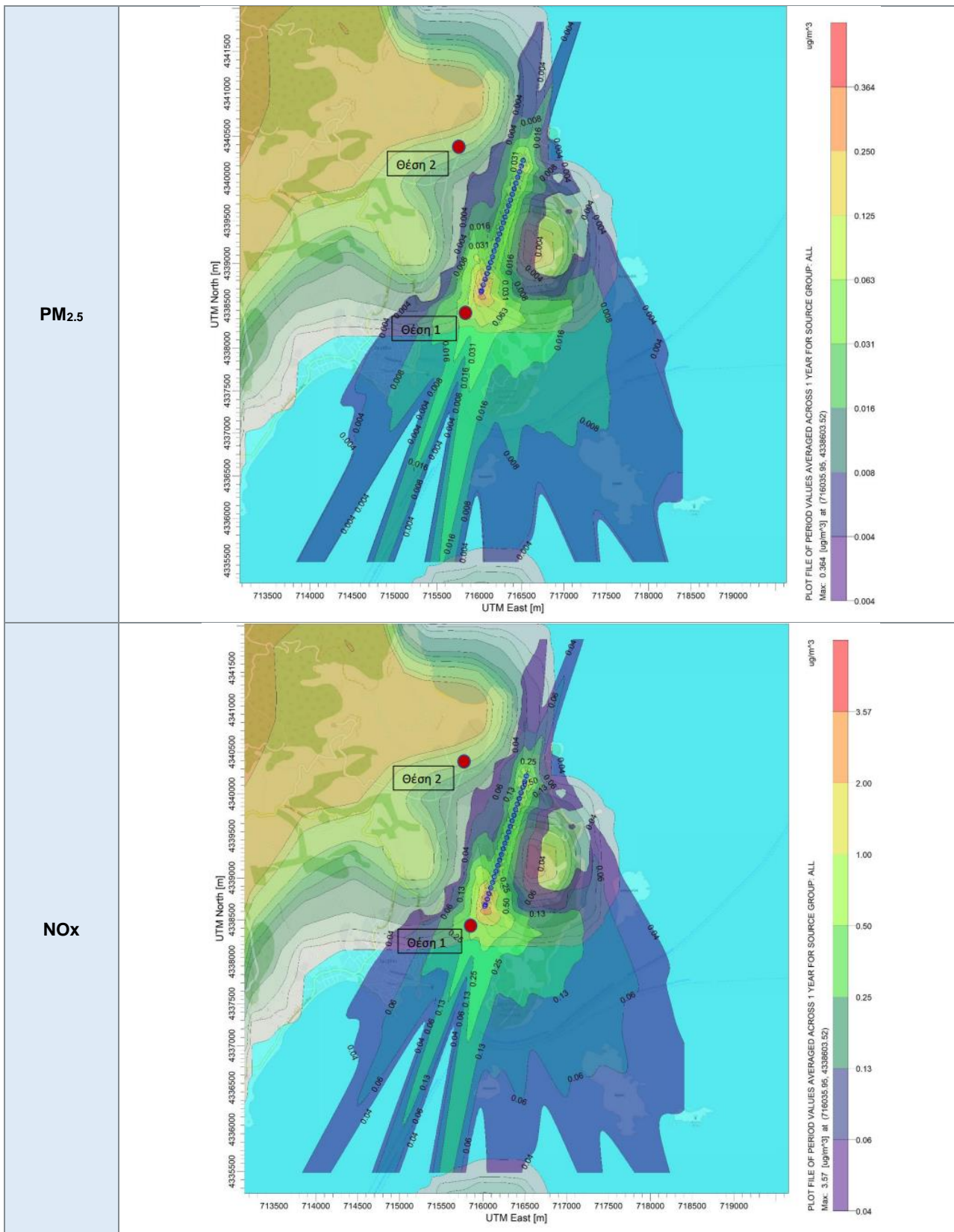
Measurement points	Measurement points description
Point 1	Parking area close to the seaside and the runway
Point 2	Kalyvia settlement, about 1 km away from the runway
<b>Measurement period:</b>	02.09.2022-19.09.2022
<b>Pollutants measured:</b>	CO, C <sub>6</sub> H <sub>6</sub> , NO, NO <sub>2</sub> , O <sub>3</sub> , PM <sub>10</sub> , PM <sub>2.5</sub> και SO <sub>2</sub>

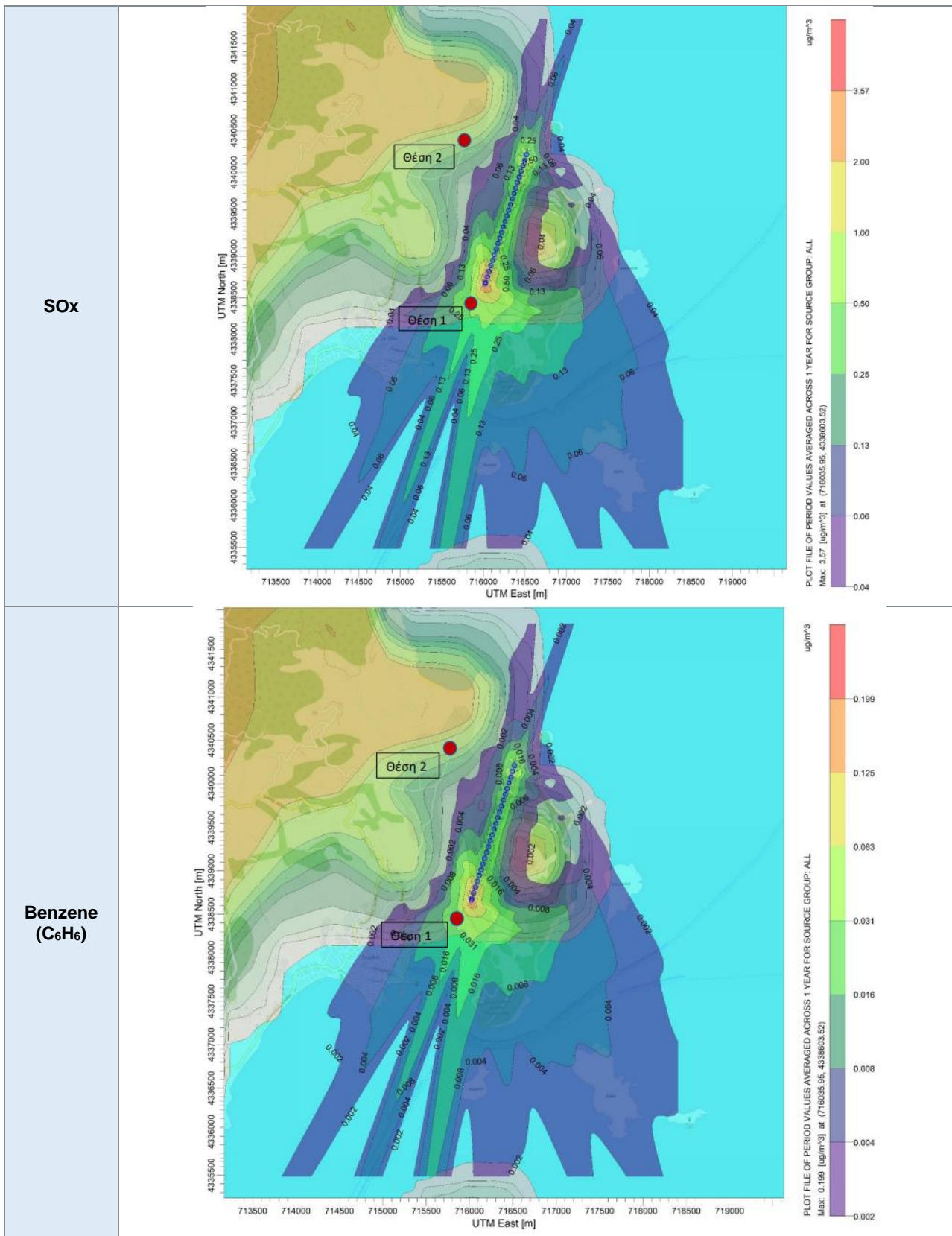
#### Summary of measurement results:

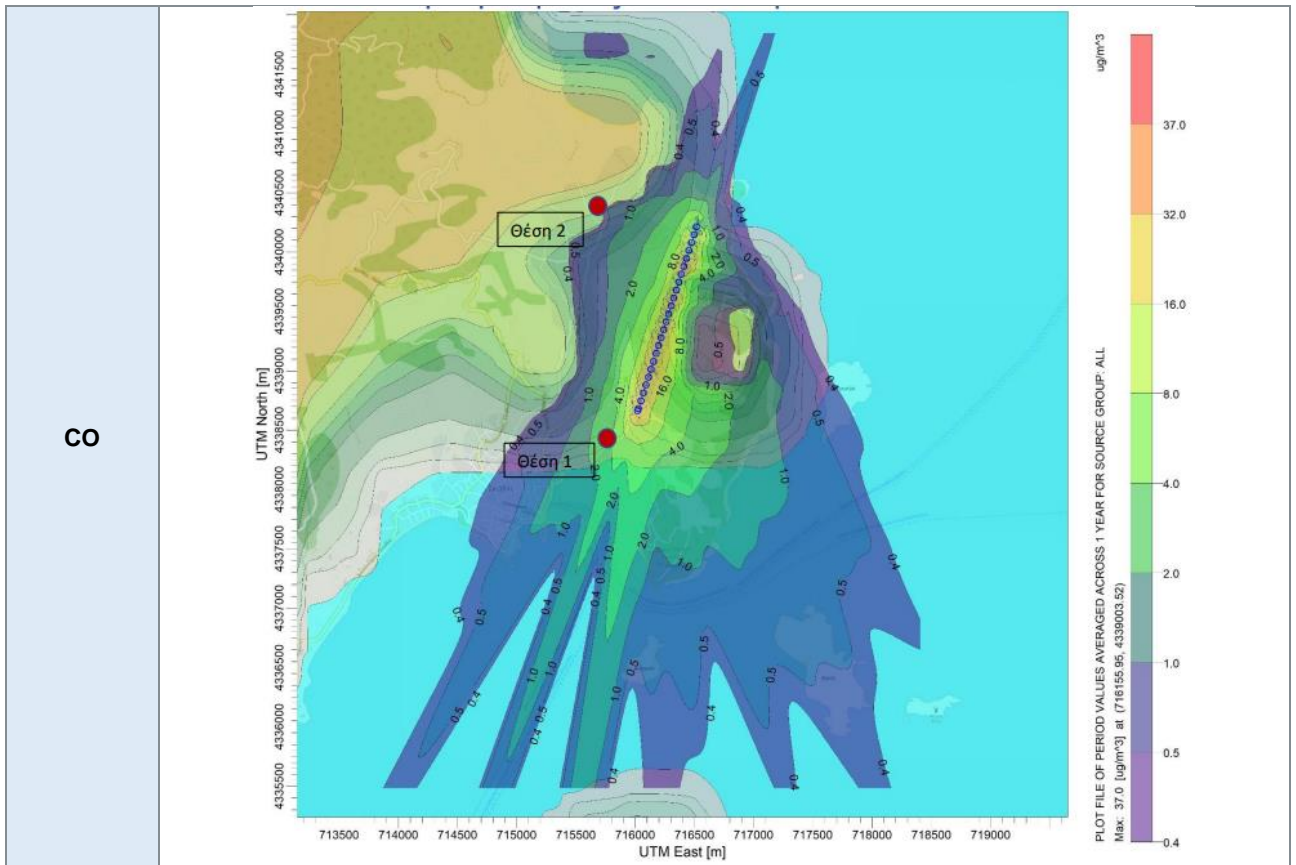
Air quality is monitored according to the airport’s monitoring program, and the new approved environmental terms. No exceedance of the air quality limits was observed for NO<sub>x</sub> , SO<sub>2</sub>, CO, O<sub>3</sub>, C<sub>6</sub>H<sub>6</sub>, PM<sub>10</sub> και PM<sub>2.5</sub>

**4.2. Air pollutants emission and dispersion modelling**

<b>Calculation of air pollutants concentrations based on an emission and dispersion modelling software</b>		<b>YES</b>
<b>Software used:</b> Aviation Environmental Design Tool (AEDT) - US Federal Aviation Administration & US Environmental Protection Agency AERMOD		
<b>Pollutants concentrations and respective contours calculation:</b> PM <sub>10</sub> , PM <sub>2.5</sub> , NO <sub>x</sub> , SO <sub>x</sub> , C <sub>6</sub> H <sub>6</sub> , CO		
<b>PM<sub>10</sub></b>		







**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	Collection	Management/Disposal
<b>Recyclables (paper, plastic, metals, glass)</b>	Separate collection by the Municipality of Skiathos	Disposal at material recovery facility for recycling
<b>Residues (Mixed Waste) and Bulky Waste</b>	Collection by the Municipality of Skiathos	Disposal in landfill

### 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><b>(if YES)</b> Short description:</p> <p>Skiathos Airport “Alexandros Papadiamantis” is close to the Natura 2000 site:</p> <ul style="list-style-type: none"> <li>• GR1430009 Islands of Aspronisos, Argkos, Maragkos, Repi, Tsougkria, Tsougkriaki and Sea Area of Islands Skiathos and Skopelos (Area:20,479.40ha)</li> <li>• GR1430003 Skiathos: Koukounaries and Evryteri Thalassia Periochi (Area: 85.71ha)</li> </ul>	
Fauna	
Are there protected species of fauna/birds in the broader airport area?	YES
<p><b>(if YES)</b> Short description:</p> <p>Skiathos Airport “Alexandros Papadiamantis” is near to the:</p> <ul style="list-style-type: none"> <li>• Important Bird Area GR198: Skiathos and Skopelos islands (Area: 20603.72ha)</li> <li>• Important Marine Mammal Area Northern Sporades (Area: 11062300ha) where <i>Monachus monachus</i> is recorded</li> </ul> <p>The protected bird species that have been observed at Skiathos airport since April 2017 are presented below:</p> <p>Black-crowned night heron (<i>Nycticorax nycticorax</i>), Booted eagle (<i>Hieraaetus pennatus</i>), Collared pratincole (<i>Glareola pratincola</i>), Eurasian skylark (<i>Alauda arvensis</i>), Eurasian stone-curlew (<i>Burhinus oedichnemus</i>), European shag (<i>Phalacrocorax aristotelis</i>), Ferruginous duck (<i>Aythya nyroca</i>), Garganey (<i>Anas querquedula</i>), Great egret (<i>Casmerodius albus</i>), Great white pelican (<i>Pelecanus onocrotalus</i>), Lapwing (<i>Vanellus vanellus</i>), Lesser kestrel (<i>Falco naumanni</i>), Marsh harrier (<i>Circus aeruginosus</i>), Mediterranean gull (<i>Larus melanocephalus</i>), Sandwich tern (<i>Sterna sandvicensis</i>), Short-toed snake eagle (<i>Circaetus gallicus</i>), Slender billed gull (<i>Chroicocephalus genei</i>), Squacco heron (<i>Ardeola ralloides</i>), Yelkouan shearwater (<i>Puffinus yelkouan</i>)</p>	



## 7. WILDLIFE HAZARD MANAGEMENT

<b>Wildlife strikes and wildlife hazard management measures</b>	
<b>Wildlife species that suffered a strike</b>	<b>Strikes (%)</b>
Gulls	38%
Pheasants	37%
Small passerines	25%
<b>Wildlife strike risk mitigation measures:</b>	
The presence and behavior of wildlife species at Skiathos airport is monitored in regular intervals, daily, from dawn to dusk. Some of the wildlife control methods applied at Skiathos 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.	

## 8. CULTURAL HERITAGE

<b>Have new cultural heritage properties been discovered during the reporting period?</b>	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)	581.819,80

### 9.2. Fuel consumption

Fuel consumption		
Number of FG vehicles at the airport	10	
Total annual fuel consumption	Diesel (lt)	8.025,19
	Unleaded gasoline (lt)	162,28

### 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 air conditioning is performed via heat pumps

### 9.4. Fuel consumption for generator

Fuel consumption	
Total annual consumption (lt)	1.298,99

### 9.5. Water consumption

Water consumption	
Total annual consumption (m <sup>3</sup> )	5.308,00

## 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)
	2022
Direct emissions form heating fuel (scope 1)	0,0
Direct emissions from fuel used for fleet vehicles (scope 1)	21,8
Direct emissions from fuel used for generators (scope 1)	3,5
Indirect emissions from refrigerants (scope 1)	62,6
Indirect emissions from electricity consumption (scope 2)	244,4
<b>Total (t)</b>	<b>269,7</b>
<b>Kg CO<sub>2</sub> /passenger</b>	<b>0.53</b>

### 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. ELECTROMAGNETIC RADIATION

The measurements were carried out at 6 different points around the antenna array located at the airport on 16/12/2022 (measurement start time 10:30, measurement end time 14:30).

### 1) Zone 27 MHz – 3 GHz

Measurement point	Amperage E	Power Density
	(V/m)	(W/m <sup>2</sup> )
1	0.3609220	0.0003455
2	1.0535636	0.0029444
3	0.6069292	0.0009771
4	0.8791459	0.0020502
5	0.1638094	0.0000712
6	0.6372349	0.0010771
7	0.3649231	0.0003532

### 2) Zone 420 MHz – 6 GHz

Measurement point	Amperage E	Power Density
	(V/m)	(W/m <sup>2</sup> )
1	0.4545176	0.0005480
2	1.2615446	0.0042216
3	0.6992230	0.0012969
4	1.2119517	0.0038962
5	0.2232745	0.0001322
6	0.7098061	0.0013364
7	0.4106649	0.0004473

#### Notes:

At this measurement campaign, no exceedances were found. The defined limits of exposure to electromagnetic radiation, are respected, as they are determined by the relevant legislation.

## 12. HUMAN COMSUMPTION WATER MONITORING PROGRAM

Human consumption water quality	
Water supply (public water network or airport's boreholes)	Airport borehole
Is sampling of the airport's water network performed?	YES
<i>(if YES)</i> Sampling frequency:	Quarterly
<p><b>Summary of results:</b>                      The results of the microbiological and chemical analyses of the water supplied from the airport's borehole show that the water parameters analyzed are <b><u>within the legislative limits</u></b> defined by the Ministerial Decision Γ1 (δ)/ΓΠ οικ. 67322/ GG 3282 B/19-9-2017 regarding the quality of human consumption water. The other results of the microbiological and chemical analyses show that the parameters analyzed as regards the water network of Terminals T1 &amp; T2 are <b><u>within the legislative limits</u></b> defined by the Ministerial Decision Γ1 (δ)/ΓΠ οικ. 67322/ GG 3282 B/19-9-2017 regarding the quality of human consumption water.</p>	

### 13. RAINWATER

<b>RAINWATER (collection, treatment disposal and recipient)</b>		
<b>Area</b>	<b>Collection/treatment/disposal</b>	<b>[YES/NO]</b>
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		YES

<b>Rainwater quality</b>	
Is sampling of the airport's rainwater performed?	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. Surface rainwater monitoring for 2022, was not performed.	

## 14. 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
<i>(if YES)</i> Sampling frequency:	Yearly
<b>Parameters analyzed:</b> Volatile hydrocarbons, aliphatic, aromatic and chlorinated (soil gas)	
<b>Summary of results:</b>	
The results of the analyses from the airport's borehole indicate that the water is suitable for human consumption and no pollution is present. According to the approved environmental terms, monitoring of groundwater and air from the Fuel Handlers is not foreseen for the year 2022.	



## 15. SEWAGE TREATMENT AND DISPOSAL

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

<b>Blue water</b>
<b>Collection and disposal:</b> Collection in watertight tank and disposal to the municipal sewage network.

<b>Waste water treatment plant description (where applicable)</b> <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