Environmental Bulletin of Aktion Airport (PVK)

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

The Aktio (PVK) airport is located in the west part of Sterea Ellada, at a distance of 4 km from Preveza, 16km from Vonitsa and 20 km from Lefkada. Cape Aktio is surrounded to the east by Amvrakikos Gulf and to the west by the Ionian Sea.

Administration

The airport administratively belongs to the Regional Unit (RU) of Aitoloakarnania of the Region of West Greece and the Ionion and more specifically to the Municipal Unit of Anaktorio of the Municipality of Aktio – Vonitsa, Local Community of Aghios Nikolaos Vonitsis.

Environmental licensing

Approved Environmental Terms	
E.T. Decision Reference number	Ref. No οικ. 11543/07.03.2017
E.T. Amendment Decision Reference number	Ref. No οικ.50502/08.12.2017

1.1. Airport Basic Data

Airport Basic Data	
Airport name IATA / ICAO	PVK / LGPZ
Airport position – Airport Reference Point (ARP)	Latitude: 38° 55' 32" N Longitude: 20° 45' 55" E
Altitude:	3.32 m
Number of runways	2
Operation hours (high season)	07:15-23:15
Operation hours (low season)	10:00 – 17:00

Runways	**Length/Width**			**Code**	
Runway	2871m x 45m			07L-25R	
Runway	2974 x 30m			07R-25L	
Full length of parallel taxiway	2974m				
Number of taxiways	3				
Apron capacity (OPTION 1)	A	B	C	D	E
	-	-	1	4	-
(OPTION 2)	-	-	2	-	1
Employees	**High season**			**Low season**	
Fraport Greece (FG) employees	24			20	
Employees of other companies	25			12	

Terminal	
➢ Total area **(m^2)**	7,000

Other buildings and service/storage areas	
➢ RFF **(m^2)**	Management by HAF
Parking Areas	
Car parking spaces	50
Bus parking spaces	18
Taxi parking spaces	12

1.2. Airport Facilities

1.2.1. Fuel Handlers

Number of fuel handler companies			
Number of fuel handler companies operating at the Airport			1
Installations inside the airport	**EKO**	**GISCO**	**HAFCO**
Environmental Management System (EMS) ***(YES/NO)***	Not operating at the airport	YES	Not operating at the airport

1.2.2. Ground Handlers

Ground Handlers			
Number of ground handler companies operating at the airport			**2**
Installations inside the airport	**SKYSERV**	**SWISSPORT**	**GOLDAIR**
Vehicles *(total number)*	7	18	-
Environmental Management System (EMS) ***(YES/NO)***	YES	YES	Not operating at the airport

2. TRAFFIC DATA STATISTICS

2.1. Annual Traffic Data

Annual Traffic Data for the year 2018	
Overall Annual Air Traffic Movements[1]	5,394
Percent of increase or decrease in relation to the previous year	1.9%
Annual passenger traffic	583,666
Percent of increase or decrease in relation to the previous year	2.6%
Annual cargo transferred (tn)	0
Percent of increase or decrease in relation to the previous year	0

Aircraft types	
Prevailing aircraft types for domestic flights	
Aircraft type	**No. of flights**

[1] Military and training flights not included.

JS41	540
AT45	228
DH8D	98
EC35	24
AT46	14
C550	11
A109	10
BE60	9
AS55	8
H25B	7
Other	88

Prevailing aircraft types for international flights	
Aircraft type	**No. of flights**
A320	927
B73H	552
B738	304
A321	276
A32A	208
F100	166
B712	165
A32B	162
B737	160
E170	124
Other	1313

2.2. High season traffic data

High season traffic data (June-September)	
Highest traffic month	July
Air traffic movements during the month with highest traffic	1172
Air traffic movements daily average number during the month with highest traffic	38

2.3. Low season traffic data

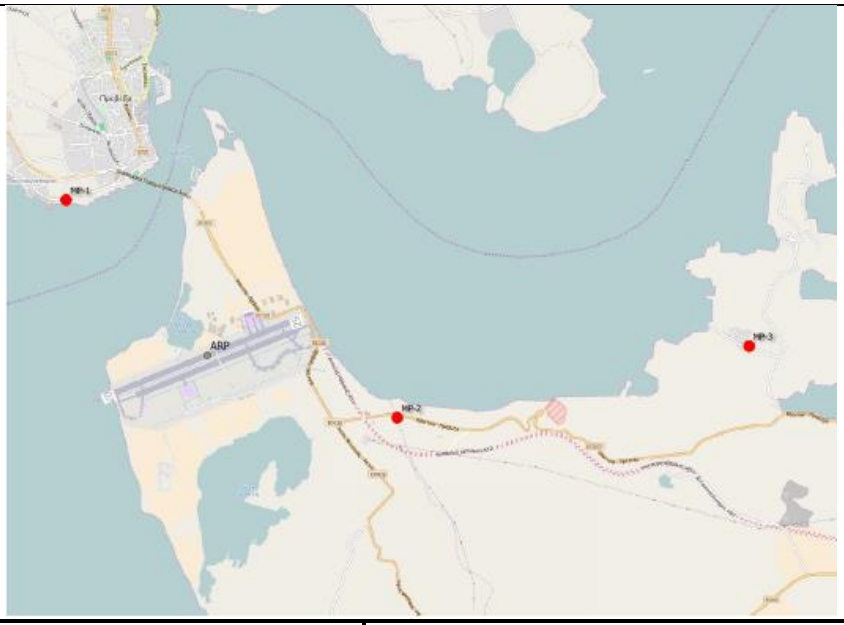
Low season traffic data (October-May)	
Lowest traffic month	December
Air traffic movements during the month with lowest traffic	56
Air traffic movements daily average number during the month with lowest traffic	6

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



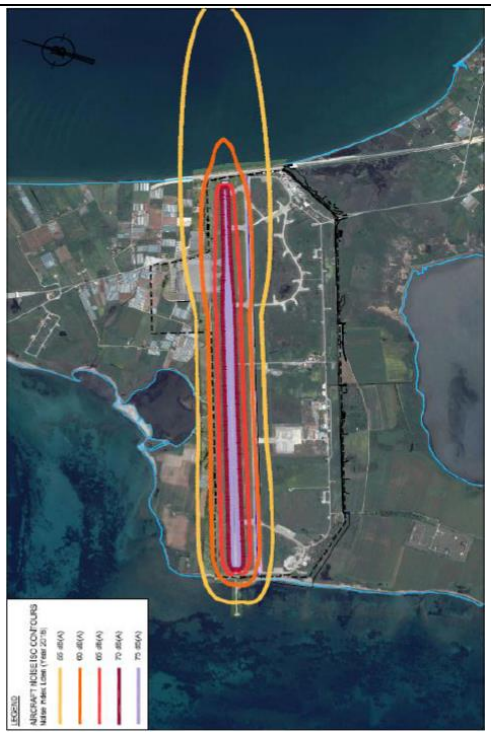
Measurement points coordinates	**Measurement points description**
1) Position: 38° 56' 43" N 20° 44' 30" E	Agios Georgios area, north west of the runway in a hotel garden. Affected by arrivals RWY 07 and departures RWY 25.
2) Position: 38° 55' 03" N 20° 47' 49" E	Aktio area, to the south-east of the runway on the roof of a cottage. Affected by departures RWY 07 and arrivals RWY 25.
3) Position: 38° 55' 36" N 20° 51' 20" E	Nea Kamarina area, east of the runway in the garden of a house. Affected by departures RWY 07 and arrivals RWY 25.
Measurement period	06.09.2018 – 09.09.2018
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	North of the airport at a distance of approximately 3 kilometers from the runway
2) Position: --° --' --" N --° --' --" E	North-east of the airport, the gas station at a distance of approximately 2.5 kilometers from the runway
Measurement period	08.09.2018 – 15.09.2018
Pollutants measured: PM_{10}, $PM_{2,5}$, NO_2, SO_2, C_6H_6, O_3	

Summary of measurement results:

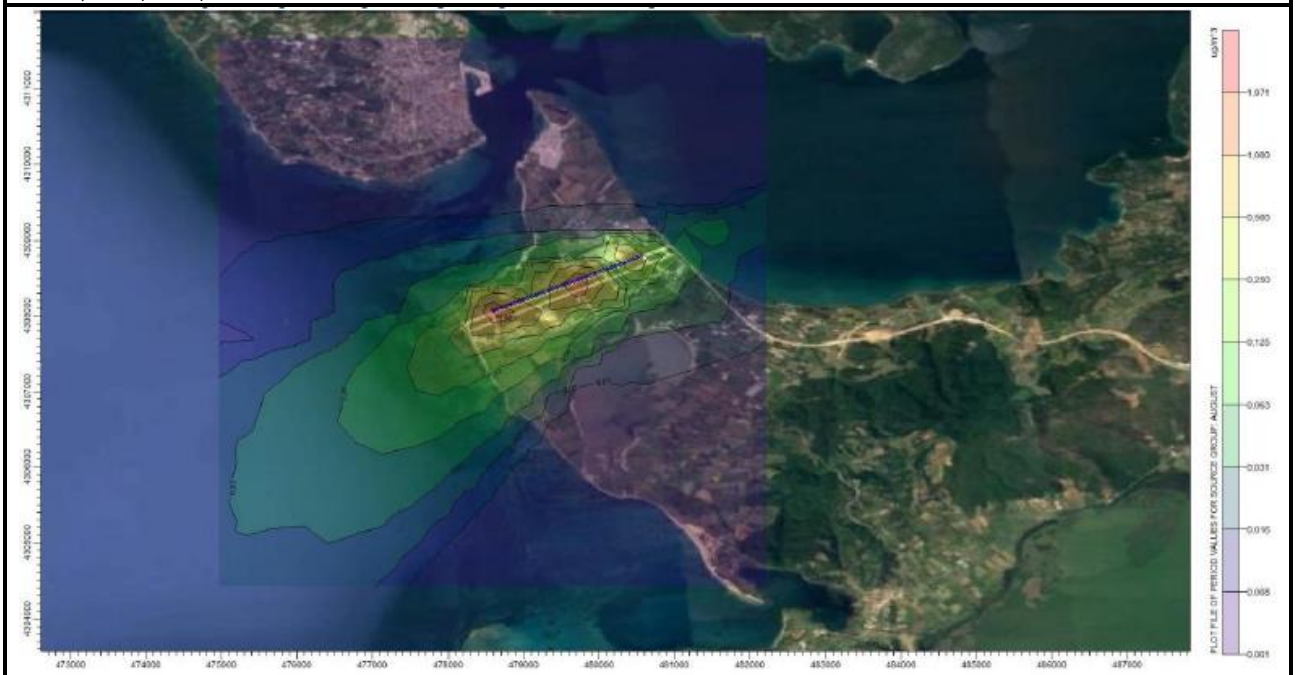
Air quality is monitored according to the airport's monitoring program.
No exceedance of the air quality limits was observed.
It is noted that some individual exceedances for the O3 pollutant mean values were recorded. As a result of its dependency on the solar radiation, ozone does not show a homogenous trend during the year. Increased ozone concentrations are recorded usually at the end of spring and beginning of summer, especially during the days with high sunlight. Therefore these momentary exceedances are considered to be individual occurrences not related to the airport's operation.

4.2. Air pollutants emission and dispersion modelling

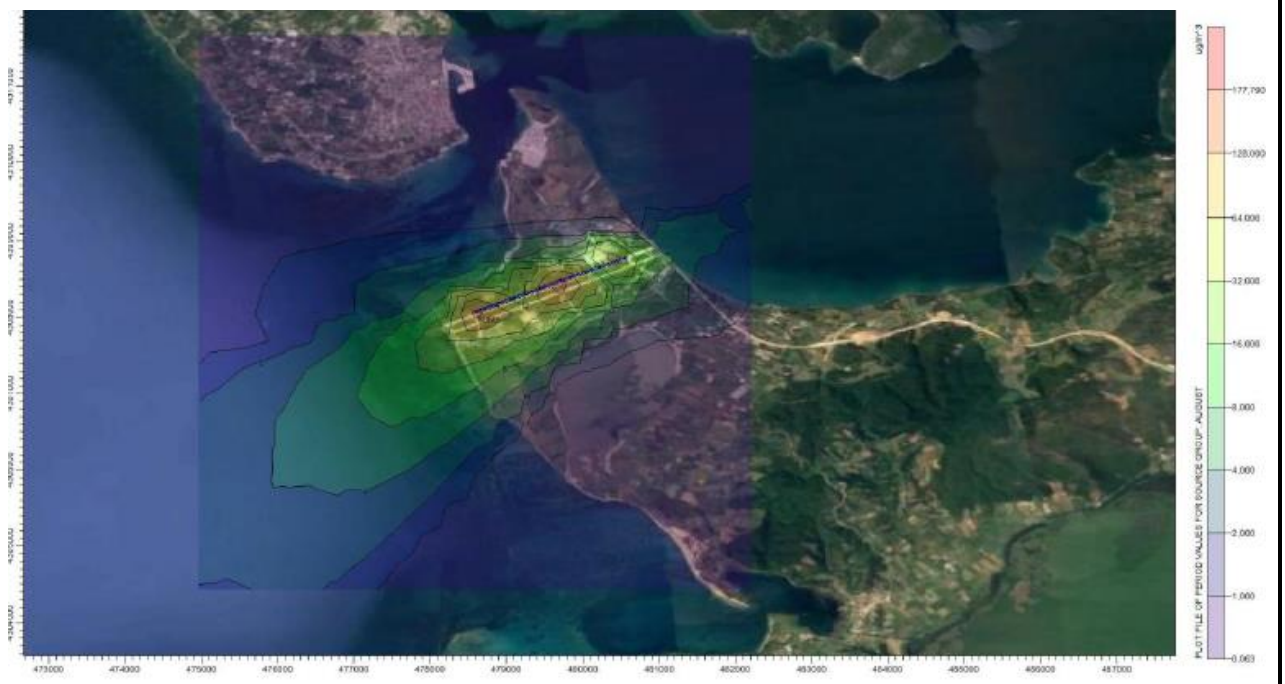
Calculation of air pollutants concentrations based on an emission and dispersion modelling software [YES/NO]	**YES**

Software used: Emissions and Dispersion Modeling System (EDMS) - US Federal Aviation Administration & US EPA AERMOD

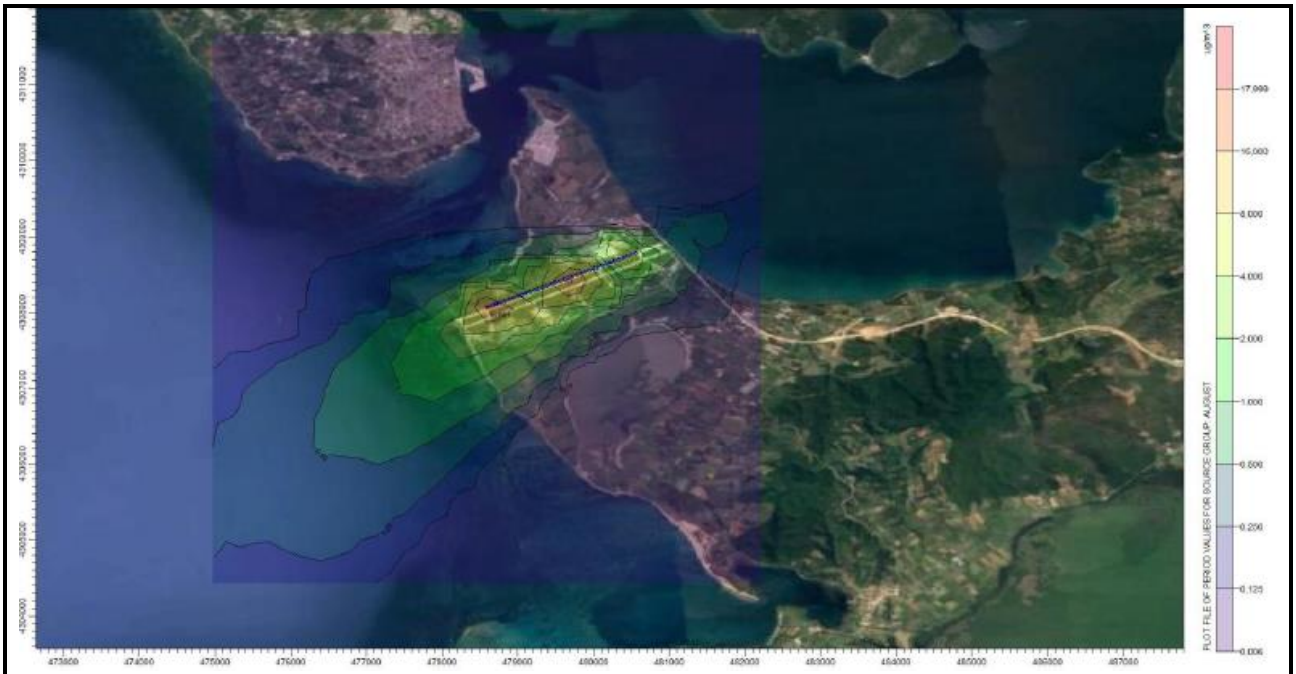
Pollutants concentrations and respective contours calculation:
PM_{10}, NO_X, SO_X, C_6H_6



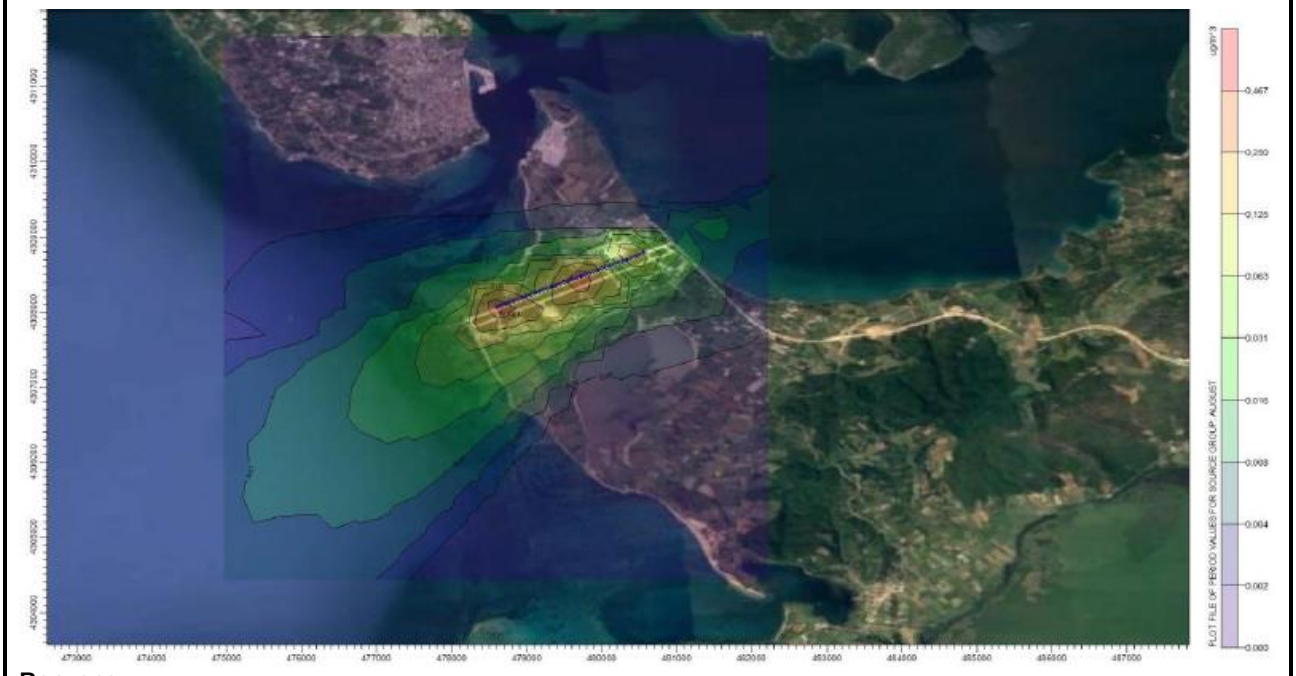
PM10



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 Aktio-Vonitsa
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 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	
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]***	NO
(If YES) Short description:	

6.2. Ecologically fragile areas

The nearest protected area is the "Lagoon of Aggeloxhori" at a distance of approximately 12km from the airport.

7. WILDLIFE HAZARD MANAGEMENT

Wildlife hazard management	
Extent of the problem (bird species):	**Birdstrikes**
-	-
Adopted measures:*	
*The birdstrike risk management is implemented by the Hellenic Air Force.	
Reference year summary results: -	

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	76,321.20
February	61,248.00
March	60,385.80
April	85,484.10
May	184,460.10
June	151,817.10
July	249,656.50
August	259,964.00
September	220,293.00
October	159,717.00
November	90,466.00
December	65,990.00
Total annual electric energy consumption (in Kwh)	**1,665,802.80**

9.2. Fuel consumption

Fuel consumption		
Number of FG vehicles at the airport	6	
Number of firefighting vehicles at the airport	Management by HAF	
Total annual fuel consumption	Diesel (lt)	3,410.13
	Unleaded gasoline (lt)	71.61

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]**
January - May	1,250
June - December	4,609
Total annual consumption	**5,859**

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)	9.3
Direct emissions from fuel used for firefighting vehicles (scope 1)	*
Direct emissions from fuel used for generators (scope 1)	2.5
Indirect emissions from electricity consumption (scope 2)	1,014.5
Total (t)	**1026.2**
Kilos CO_2/ passenger	1.76

Notes:
Fraport Greece A 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 ISO 14064 regarding greenhouse gas emission by an independent certification body • *HAF is responsible for the management of the airport's RFF vehicles.

11. HUMAN CONSUMPTION WATER MONITORING PROGRAM

Human consumption water quality	
Water supply (public water network or airport's boreholes)	Municipal network of Aktio-Vonitsa
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)	NO
Autonomous airport's waste water treatment plant (WWTP)	YES
Short description: -	
Blue water	
Collection and disposal: Collection in a tank and disposal at the airport's WWTP	

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	Tertiary treatment with chlorination
Treatment method	Prolonged ventilation
Disposal of treated wastewater	Drain ditch to the Ionian Sea based on Joint Ministerial Decision KYA 328925/7912 (Government Gazette 35/Δ/2017)
Sludge disposal	Landfill
Sampling frequency of WWTP effluent	Monthly based on the decision determining the recipient
Parameters analysed	BOD, COD, TSS, T. Coliforms, E.Coli, pH, Dissolved Oxygen, Grease and Oils, Residual Chlorine
Summary of quality of WWTP effluent	The WWTP effluent observes the limits set out in the decision specifying the recipient