


**ANNUAL REPORT FOR THE IMPLEMENTATION
OF THE ENVIRONMENTAL TERMS DURING OPERATION AND MAINTENANCE OF PATHE
MOTORWAY, SECTION “SKARFEIA – RACHES” AND
CENTRAL GREECE MOTORWAY (E65), SECTION “XYNIADA – TRIKALA”**

**PROJECT: “DESIGN - CONSTRUCTION - FINANCING - OPERATION - MAINTENANCE AND
EXPLOITATION OF THE PROJECT
“CENTRAL GREECE MOTORWAY (E65)”**



Date	31.01.2020
Created by:	Concessionaire 

**REFERENCE PERIOD
YEAR 2019**

**FOR THE ENVIRONMENTAL MANAGEMENT AND IMPLEMENTATION
OF ENVIRONMENTAL TERMS DURING OPERATION AND MAINTENANCE**

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1. INTRODUCTION

This Environmental Management Report outlines the company's, KENTRIKI ODOS S.A., Environmental Management Processes during the operation and maintenance of the Concession Project for the year 2018 (01.01.2019 to 31.12.2019). This Report also includes the reference data on compliance with the environmental terms during the 2nd semester of 2019.



The company ODOS KENTRIKIS ELLADOS S.A. has implemented a program to monitor the environmental impact, in accordance with the Concession Contract and the approved Environmental Terms (E.T.) of the project. The implementation of the program is done in such a way that it has multiple beneficial nature to the man-made and the natural environment on the areas of influence, as well as to serve in the best possible way the users at the section **Skarfeia – Raches (57 km) of the PATHE – E65 Motorway** and the section **Xyniada – Trikala (79.5 km) of the E65 Motorway**.



The monitoring of environmental and social parameters is done in such a way that enables early recognition of any harmful tendencies and permits the reduction and/or elimination of the negative effects, by intervening with suitable protective measures. Additionally, the constant monitoring enables the effectiveness assessment of the proposed protection measures, so that



the protection of the affected by the operation and the maintenance of the motorway environmental parameters is ensured over time. The collection and recording of qualitative and quantitative evidence during constant E.T. monitoring also aims to promote further awareness on the impacts that the construction of such projects may have on a

similar Environment.

At the PATHE motorway, section “Skarfeia – Raches”, and at the E65 motorway, section “Xyniada – Trikala”, a comprehensive environmental monitoring program is implemented, through which all Environmental Terms are met, as detailed below.

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2. PROJECT DESCRIPTION

2.1 PATHE E65 Motorway

State : Hellenic Republic

Concessionaire : ODOS KENTRIKIS ELLADAS S.A.

Motorway : PATHE

Section : Skarfeia – Raches

The PATHE motorway at the section Skarfeia – Raches includes:

1. 12 (twelve) Junctions

- Skarfeia semi-I/C near K.P. 185+500
- Molos semi-I/C near K.P. 190+500
- Thermopyles semi-I/C near K.P. 198+500
- Mpralos (Thermopiles) I/C near K.P. 203+000
- E65 semi-I/C near K.P. 207+000
- Anthili semi-I/C near 210+000
- Roditsa I/C near K.P. 212+500
- Ag. Paraskevi I/C near K.P. 217+500
- Ag. Marina I/C near K.P. 223+500
- Stylida – Karavomylos I/C near K.P. 232+000
- Karavomylos – Achinos I/C near K.P. 237+000
- Raches semi-I/C near K.P. 241+000



2. 2 (two) Frontal & 8 (eight) Lateral Toll Stations

i. Frontal

- Agia Triada near K.P. 195+000
- Mavromantila near K.P. 220+000

ii. Lateral

- 2 on Molos I/C near K.P. 190+500
- 2 on Thermopyles I/C near K.P. 203+000
- 2 on Ag. Marina I/C on K.P. 223+500
- 2 on Karavomylos I/C near K.P. 232+000



3. 6 (six) Temporary Parking Areas

- Near K.P. 188+000 to Lamia
- Near K.P. 188+000 to Athens

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- Near K.P. 221+500 to Lamia
- Near K.P. 221+700 to Athens
- Near K.P. 239+250 to Lamia
- Near K.P. 239+250 to Athens

4. 6 (six) Tunnels

- Near K.P. 225+800 to K.P. 226+500, Bilaterally
- Near K.P. 227+500 to K.P. 228+500 Bilaterally
- Near K.P. 228+500 to K.P. 229+000 (to Lamia)
- Near K.P. 228+700 to K.P. 229+000 (to Thessaloniki)

5. 3 Winter Maintenance Stations (SCS)

- Agia Triada SCS near K.P. 195+000
- Agia Marina SCS near K.P. 223+500
- Stylida SCS near K.P. 232+000

The sections of the Concession Contract Project are divided in five (5) Geographical Units (GU).

S/N	SECTION	Km
1	Skarfeia – Thermopyles	17.32
2	Thermopyles – Spercheios (except the bridge under construction by ERGOSE)	8.50
3	Spercheios - Ag. Paraskevi I/C	3.50
4	Ag. Paraskevi I/C – Ag. Marina I/C	8.50
5	Ag. Marina – Raches	19.20

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2.2 Central Greece Motorway (E65)

The Central Greece Motorway, Xyniada – Trikala Section includes:

1. 8 Junctions

- Xyniada I/C near K.P. 32+000
- Smokovo semi-I/C near K.P. 48+500
- Anavra I/C near K.P. 61+000
- Sofades I/C near K.P. 72+500
- Karditsa I/C near K.P. 81+000
- Proastio I/C near K.P. 97+500
- Loggos semi-I/C near K.P. 106+500
- Trikala I/C near K.P. 111+500



2. 2 Frontal and 3 Lateral Toll Stations

i. Frontal (2):

- Sofades near K.P. 66+000
- Trikala near K.P. 105+500

ii. Lateral (3):

- 2 on Anavra I/C near K.P. 61+000
- 2 on Proastio I/C near K.P. 97+500
- 2 on Trikala I/C near K.P. 111+500 (not in operation)



3. 2 Motorists Service Stations (MSS)

- Xyniada MSS near K.P. 43+500 bilaterally (expected)
- Sofades MSS near K.P. 70+500 bilaterally

4. 8 Parking Areas

- Near K.P. 105+000 to Lamia
- Near K.P. 102+000 to Egnatia
- Near K.P. 86+500 to Lamia
- Near K.P. 86+500 to Egnatia
- Near K.P. 52+000 to Lamia
- Near K.P. 52+000 to Egnatia



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- Near K.P. 35+000 to Lamia
- Near K.P. 35+000 to Egnatia

5. One Maintenance Control Center (MCC)

- Sofades MCC near K.P. 70+500



6. 3 Winter Maintenance Stations

- Xyniada SCS (same position as MCC/MSS near K.P. 43+500) (expected)
- Sofades SCS (same position as MCC/MSS) near K.P. 70+500
- Trikala SCS (near K.P. 105+500) (expected)



7. 2 Tunnels

- Tunnel T3A of 113 m length near K.P. 45+600
- Tunnel T3 of 387 m length near K.P. 46+000

8. 9 Bridges > 50 m

- Bridge of aprox. 70 m length near K.P. 48+500
- Bridge of aprox. 160 m length near K.P. 49+000
- Bridge of aprox. 295 m length near K.P. 51+000
- Bridge of aprox. 150 m length near K.P. 54+000
- Bridge of aprox. 150 m length near K.P. 55+500
- Bridge of aprox. 51.5 m length near K.P. 70+500
- Bridge of aprox. 92 m length near K.P. 90+000 (Kalentzis River)
- Bridge of aprox. 587 m length near K.P. 103+500 (Pineios River)
- Bridge of aprox. 74 m length near K.P. 110+500 (Trikala – Larisa highway)



3. SUPERVISORY SERVICES (PROJECT OWNERS)

The Supervisory Services of the Concession Project are:

- **Special Service for Public Works / Construction of Transportation Projects with Concession Contract** (EYDE/KSESP), 5 Karystou St., 115 23, Athens, Supervisor Mr. N. Dimopoulos.
- **Directorate D17, Directorate of Infrastructure Operation, Maintenance & Exploitation with Concession Contract**, 70 Panormou St., 115 23, Athens, Supervisor Mrs. E. Kanellopoulou.

Concessionaire: ODOS KENTRIKIS ELLADAS S.A.

Motorway: PATHE (Skarfeia – Raches & E65 (Xyniada – Trikala))

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4. ENVIRONMENTAL AUTHORIZATION

4.1 JMD ETA and their validity – Present Situation

4.1.1 PATHE: Skarfeia – Raches Section

S/N	Section	E.T. Validity	Authorizations issued
1	Skarfeia – Lamia Subsection Skarfeia - Thermopyles	The section ETAD is valid until 27.12.2028 Decision G.S.P.P. DIPA 96975/4083/27.12.2018)	<ul style="list-style-type: none"> • JMD No 146113/12.07.2005, E.T. Approval • JMD No 129696/06.06.2007. Amendment of JMD No ref. 146113/12.7.2005. • EYPE 122881/08.03.2010, Environmental authorization for Ag. Triada toll station and Molos I/C. • G.S.P.P. DIPA/85272/3419/27.11.2018: E.T. amendment for the construction and the operation of 6 Parking Areas • G.S.P.P. DIPA 96975/4083/27.12.2018. Amendment and renewal of E.T.
2	Thermopyles – Nea Koiti Spercheiou	The section ETAD is valid until 31/12/2025 (Decision-G.S.P.P. DIPA 46836/05.03.2015)	<ul style="list-style-type: none"> • JMD No 131550/04.03.2003, E.T. Approval • EYPE 121668/08.02.2010 Environmental authorization for toll station on Thermopyles I/C position. • G.S.P.P./DIPA 146836/05.03.2015 Amendment and renewal of E.T.
3	Nea Koiti Spercheiou - Roditsa I/C	The section ETAD is valid until 14/09/2028 (Decision-G.S.P.P. DIPA 60908/1786/14.09.2018)	<ul style="list-style-type: none"> • JMD No 146109/30.09.2005 E.T. Approval • G.S.P.P./DIPA 145496/21.01.2015. E.T. Amendment • G.S.P.P. DIPA 60908/1786/14.09.2018. E.T. Renewal
4	Lamia –Raches Subsection Roditsa I/C – Ag. Marina I/C	The section ETAD is valid until 14.03.2026 (Decision-G.S.P.P. DIPA 13590/15.03.2016)	<ul style="list-style-type: none"> • JMD 130665/02.05.2003 E.T. Approval • JMD 195214/11.01.2011 amendment of the Decision No 130665/2.5.2003 E.T. Approval • G.S.P.P./DIPA 13590/15.03.2016 Renewal and Amendment of E.T. • G.S.P.P. DIPA/85272/3419/27.11.2018: E.T. amendment for the construction and the operation of 6 Parking Areas

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5	Stylida – Karavomylos Total Bypass	The section ETAD is valid until 31/12/2023. (Ministerial Decision No 172866/23.05.2014)	<ul style="list-style-type: none"> • JMD 100198/30.05.2006 E.T. Approval • EYPE 172866/23.05.2014 Amendment and renewal of E.T. • EYPE 121667/08.02.2010 Environmental authorization for toll station on Ag. Marina – Stylida I/C and Stylida – Karavomylos I/C positions. • G.S.P.P./DIPA 12757/10.03.2016 Amendment of E.T. • G.S.P.P. DIPA/85272/3419/27.11.2018: E.T. amendment for the construction and the operation of 6 Parking Areas
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4.1.2 E65: Xyniada – Trikala Section

The per-section validity period of the approved environmental terms for the Central Greece Motorway (E65) as well as the authorizations issued are presented in the following table:

S/N	Section	E.T. Validity	Authorizations issued
1	Lamia – Makrychori	<p>The section ETAD is valid until 31/12/2025.</p> <p>(Decision of Director-General for Environment of YPEN/DIPA No 151991/16.12.2015).</p>	<ul style="list-style-type: none"> • JMD No JMD ETA 144504/18.11.2005, E.T. Approval • Decision of Director-General for Environment of YPEKA No 167266/01.04.2013. Modification of the section K.P. 0+000 - K.P. 14+500 (except the Lamia I/C). • Ministerial Decision 173471/27.06.2014. Modification of the sections K.P. 31+212 – K.P. 85+000 (except the section K.P. 47+313 – K.P. 51+483). • Ministerial Decision 147997/14.04.2015. Modification of the section K.P. 47+313 – K.P. 51+483. • Decision of Director-General for Environment of YPEN No 151991/16.12.2015. Extension of validity period. • Ministerial Decision 24355/13.05.2016. Environmental authorization for Lateral toll stations on Anavra I/C and Frontal toll stations on Sofades. • Ministerial Decision 61420/16.12.2016. Modification on the section K.P. 14+500 – K.P. 31+212 and Lamia I/C (K.P. 5+500). • Ministerial Decision 21166/22.05.2017. Amendment as regards the integration of the water exploitation project development authorization at Fthiotida and Karditsa regional units for the operational needs of the motorway. • Ministerial Decision 17095/04.04.2017. Amendment as regards the execution of the water exploitation projects (drilling for water supplies) at Fthiotida and Karditsa regional units for the operational needs of the motorway

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			<ul style="list-style-type: none"> • Decision of Director-General for the environmental policy of the YPEN No 22199/23-11- 2017. Environmental authorization Xyniada MSS and Sofades MSS. • Decision of Director-General Decision of Director-General for the environmental policy of the YPEN No 52131/22.12.2017 Update of the final design of the section K.P. 31+212 – K.P. 85+000 • Decision of Director-General for the environmental policy of the YPEN No 5396/07-02-2017: Technical and Environmental Study (TEPEM) for the installation and the operation of a Traffic Management Center in the Sofades MCC near K.P. 69+700 of E65 • YPEN/DIPA/67165/2283-07-06-2019 – Amendment of Environmental Terms of the section Lamia – Makrychori of E65 as regards the environmental licensing of the borrow pit at “Kalamaki” location of Agia Paraskevi, Municipality of Lamia.
2	Improvement of the connecting road of Lamia – Karditsa NR with Central Greece (E65) at Xyniada I/C location	The ETAD is valid until 01/12/2025 (decision Secr.-Gen. of Decentralized Administration with prot. no. 4644/212888/01-12-2015)	<ul style="list-style-type: none"> • Secr.-Gen. of Decentralized Administration with prot. no. 4644/212888/01-12-2015
3	Makrychori – Kalampaka	The section ETAD is valid until 31/12/2025. (Decision of Director-General for Environment of YPEN/DIPA No 151991/16.12.2015.)	<ul style="list-style-type: none"> • JMD ETA 145521/18.11.2005. E.T. Approval • Decision of Director-General for Environment of YPEKA No 203583/04.12.2012. As regards the construction of the C-C on K.P. 137+000. • Decision of Director-General for Environment of YPEKA No 172041/26.11.2013. Modification of the section K.P. 85+800 - K.P. 137+550 (except the sections K.P. 115+100 - K.P. 118+043 and K.P. 131+475 - K.P. 132+420). • Decision of Director-General for Environment of YPEN/DIPA No 151991/16.12.2015. Extension of validity period.

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			<ul style="list-style-type: none"> • Decision of Director-General for the environmental policy No 52133/22.12.2017. Update of the final design. • G.S.P.P. DIPA 95851/4000/21.12.2018. Amendment of E.T. and authorization of Trikala MSS
4	Connecting road of Smokovo I/C		<ul style="list-style-type: none"> • JMD 103681/05-05-2006
5	Kalampaka – Egnatia	<p>The section ETAD is valid until 21/05/2028.</p> <p>(Decision G.S.P.P./DIPA No 9728/21.05.2018)</p>	<ul style="list-style-type: none"> • JMD 147014/18.11.2005. E.T. Approval • JMD 151991/16-12-2015 • G.S.P.P./DIPA No 9728/21.05.2018 E.T. Approval due to amended design

4.2 Submissions

For PATHE/E65 Motorway, the reference period (2019), the following environmental studies have been submitted by the Concessionaire:

- Data File for adaptation to the requirements of JMD 1915/2018 (OGG 304B/2018) of the PATHE Motorway, section Skarfia - Raches (new national kilometric mileage CH. 185+127 to CH. 242+079) - (Concessionaire to EYDE D17) with prot. no. 21470/20.11.2019, and EYDE (Directorate D17) to GDPP/DIPA with prot. no. 13316/13.01.2020)

For E65 Motorway, the reference period (2019), the Concessionaire submitted the following environmental studies:

- Data File for adaptation to the requirements of JMD 1915/2018 (OGG 304B/2018) of the E65 Motorway, section Makrychori – Kalampaka (new national kilometric mileage CH. 85+800 to CH. 137+553) - (Concessionaire to EYDE D17) with prot. no. 21470/20.11.2019, and EYDE (Directorate D17) to GDPP/DIPA with prot. no. 13316/13.01.2020)

4.3 Outstanding issues

The environmental studies that have been submitted up to the end of the reference period of the present report for the section Skarfeia – Raches of PATHE and E65 motorway, and the E.T. issuance is not yet completed, are presented in the following table.

S/N	Section	Outstanding issues	Submissions	Observations
1	Total Bypass of Stylida - Karavomylos	TEPEM for Winter Maintenance stations on Ag. Marina I/C	<ul style="list-style-type: none"> • Submission of Kentriki Odos S.A. no. 18754/26.11.2015 to the General Secretariat of Infrastructure/Directorate-General for Transport Infrastructure/Operation and Maintenance of Concession Projects. • Submission No Infrastructure/Directorate-General for Transport Infrastructure/Operation and Maintenance of Concession Projects LE/KE/01/08/10/4524/03.12.2015 to DIPA 	Approval of DIPA is pending.
2	E65 – Section S1; Lamia – Makrychori, subsection	Submission of Environmental Impact Study for the amendment of the	• Submission of Kentriki Odos S.A. to the EYDE/KSESP with prot. no. 20800/29-10-2018	Approval of DIPA is pending.

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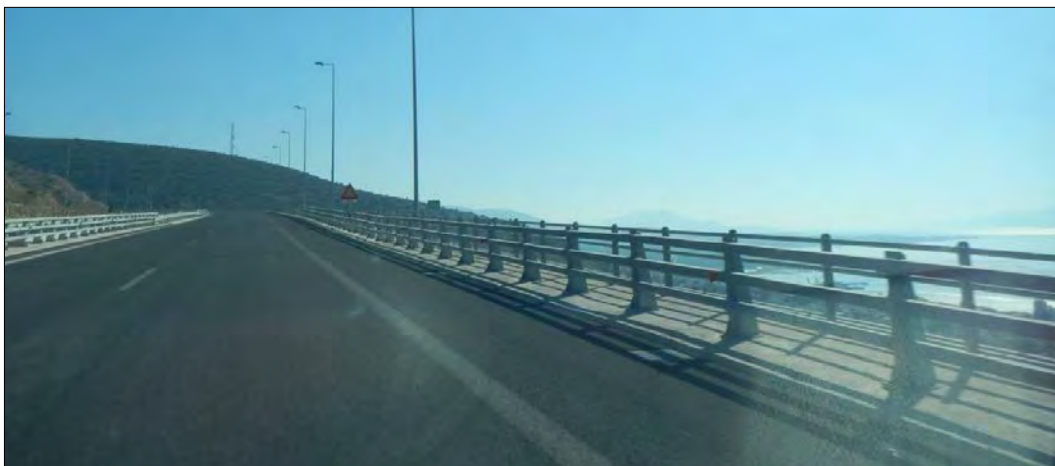
	CH. 33+000 – CH. 61+150	JMD EPO 144504/18-11-2005, as amended and in force regarding the required anti-flood protection projects along E65	<ul style="list-style-type: none"> • Submission of EYDE/KSESP to GDPP/DIPA with prot. no. 7986/31-10-2018 	
3	E65 – Section S2: Makrychori – Kalampaka Section, subsection CH. 88+237 – CH. 89+919	Submission of Environmental Impact Study for the amendment of JMD EPO 145521/18-11- 2005, as amended and in force regarding the required anti-flood protection projects along E65	<ul style="list-style-type: none"> • Submission of Kentriki Odos S.A. to the EYDE/KSESP with prot. no. 20800/29-10-2018 • Submission of EYDE/KSESP to GDPP/DIPA with prot. no. 7986/31-10-2018 	Approval of DIPA is pending.

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5. SENSITIVE AREAS OF THE PROJECT

The following table presents the natural areas under protection that the motorway passes through or is adjacent to.

S/N:	Section	Natura 2000 Area
1	Skarfeia – Thermopyles	<ul style="list-style-type: none"> Spercheios valley and estuary – Maliakos Bay (GR2440002)
2	Thermopyles – Spercheios (except the bridge under construction by ERGOSE)	<ul style="list-style-type: none"> Spercheios valley and estuary – Maliakos Bay (GR2440002) Lower Course and estuary of Spercheios River (GR2440005)
3	Spercheios - Ag. Paraskevi I/C	<ul style="list-style-type: none"> Spercheios valley and estuary – Maliakos Bay (GR2440002)
4	Ag. Paraskevi I/C – Ag. Marina I/C	<ul style="list-style-type: none"> Spercheios valley and estuary – Maliakos Bay (GR2440002) The karst springs of Ag. Paraskevi are located 250m away from the project, which are the main habitat of Pungitius Hellenicus, the rare and protected fish P.D.67/81. Sensitive environmental element of the area is the stork colony in the area between the settlements of Ag. Paraskevi and Megali Vrysi.



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6. ATMOSPHERIC POLLUTION

By the approved environmental terms, no program for air quality monitoring is provided for at the section of the PATHE (Skarfeia – Raches).

According to the environmental terms and the relevant approvals at the section Makrychori – Kalampaka of the E65 Motorway, the Measuring Station for Air Pollution is being installed. The station is being installed at the G.U. of Sofades area at the entrance of the adjacent Motorist Service Station. The station has been put on trial on 15.03.2019.

For the year 2019, a complete air pollution monitoring program was implemented by the above three air pollution stations, which are operating on a 24-hour basis. The air pollution report was prepared and will be filed to the Service KAPA/YPEN (Prot. No. 14516/320-07.02.2017, EYΔΕ Directorate D17) with receipt prot. no. 14291-07.02.2020 & EYDE/KSESP with receipt prot. no. C/966-07.02.2020). A similar report will also be prepared and submitted for 2020.

For the measurement of pollutants, the stations have been equipped with approved analyzers in accordance with the National Legislation (Ministerial Decision No 14122/549/E.103/2011 (Gov. Gazette 488/B'/30.3.2011) "Measures to improve the air quality, in accordance with the provisions of Directive 2008/50/EC" of the European Parliament and of the Council of the European Union of 21 May 2008 on ambient air quality and cleaner air for Europe. For every 24 hours, at each station the following are recorded:

1. The CO, CO₂, NO, NO₂, SO₂, O₃, TSP, PM₁₀, PM_{2,5}, C₆H₆ (Benzene), C₇H₈ (toluene) and xylene polluting emissions
2. The meteorological conditions of each installation

The pollutants are measured continuously throughout the day. The average primary pollution values are calculated every five minutes in the recording system that is installed at each station and connected to the analyzers. These measurements are transferred to the server of the air pollution measuring system, via the optical fiber network, where they are stored. At the end of each month the measurements are corrected on the network server. The corrections include calibration results and analyzer limit and slip corrections. After corrections, the average hourly, eight-hour, and 24-hour values of pollutants (NO₂, CO, O₃, SO₂, Benzene, suspended particles PM₁₀ and PM_{2,5}) are calculated and stored.

For 2019, the annual air pollution report has been submitted to the Directorate KAPA/YPEN with prot. No. 42060/31-1-2017.

For 2016, the measured pollutant records were as follows:

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Suspended Particles PM₁₀

The Limit as of 01/01/2005 for PM₁₀ particles is 50µg/m³ on average daily value and should not be exceeded more than 35 times per year. In addition, the average annual value should not exceed 40µg/m³.

Number of exceedances of PM₁₀ daily mean values over 50µg/m³

Number of exceedances	Sofades
Average daily value in µg/m ³	7

The value (50µg/m³) was not exceeded at any station >35 times per year.

The average annual price for 2019 was:

Average annual value in µg/m ³	Sofades
	19,91

The average value (40µg/m³) was not exceeded at any station.

Suspended Particles PM_{2,5}

For suspended particles PM_{2,5}, the limit of the average annual value as of 01/01/2015 is 25 µg/m³.

The average annual value for 2019 was:

Average annual value in µg/m ³	Sofades
	12,76

The value (25µg/ m³) was not exceeded at any station.

NO₂

The Limit as of 01/01/2010 is 200µg/m³ on average hourly value and should not be exceeded more than 18 times per year. In addition, the average annual value should not exceed 40µg/m³.

Number of exceedances of average hourly value of over 200 µg/m³

Number of exceedances of average hourly value in µg/m ³	Sofades
	0

The average daily value (200µg/m³) was not exceeded > 18 times per year

The average annual value for 2019 was:

Average annual value in µg/m ³	Sofades
	2,88

The average annual value (40µg/m³) was not exceeded at any station.

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CO

The Limit as of 01/01/2005 is 10 mg/m³ (maximum daily eight-hour value).

Number of exceedances of measurements of over 10 mg/m³

Number of exceedances of maximum daily eight-hour value in mg/m ³	Sofades
	0

The maximum daily eight-hour value (10 µg/m³) was not exceeded at any station.

The average annual value for 2019 was:

Average annual value in µg/m ³	Sofades
	0,16

SO₂

The Limit as of 01/01/2010 is 350µg/m³ as the average hourly value and should not be exceeded more than 24 times per year. Also, the average daily value is 125µg/m³ and should not be exceeded more than 3 times per year.



Number of exceedances of average hourly value of over 350µg/m³

Number of exceedances Average hourly value in µg/m ³	Sofades
	0

The average hourly value (350µg/m³) was not exceeded > 24 times per year at any station.

The average annual value for 2019 was:

Average annual value in µg/m ³	Sofades
	2,3

The average daily value (125µg/m³) was not exceeded > 24 times per year at any station.

Benzene

The limit as of 01/01/2010 is 5µg/m³ on average annual value.

The average annual value for 2019 was:

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Average annual value in $\mu\text{g}/\text{m}^3$	Sofades
	0,3

The average annual value ($5 \mu\text{g}/\text{m}^3$) was not exceeded at any station.

7. NOISE AND TRAFFIC VOLUME

The year 2019, the 24-hour traffic noise measurements of the monitoring program obtained are:

- **9 24-hour** traffic noise measurements of the monitoring program at the PATHE Motorway, **Skarfeia – Raches Section**
- **7 24-hour** traffic noise measurements at the E65 Motorway, **Xyniada – Trikala Section**

A total of **16 24-hour** traffic noise measurements were obtained, and the result assessment of the 24-hour traffic noise measurements for 2018 shows that

A. “Skarfeia – Raches” Section

In this section, in the total of 9 24-hour traffic noise measurements, **there is NO exceedance** and no additional measures are necessary.



B. “Xyniada – Trikala” Section

In this section, in the total of 7 24-hour traffic noise measurements, **there is NO exceedance** and no additional measures are necessary.

The above measurements were carried out in accordance with the standards and the requirements of existing legislation. For the conduction of the measurements, special scientific equipment was used, which meets all the international standards and guidelines provided by the European and Greek legislation. For the year 2018, the monitoring program O.K.TH. (Road Traffic Noise) that has been submitted to the Directorate of KAPA/YPEN was approved with the YPEN/DKAPA/79861/1870/20-09-2019.

The noise measurement results and records of the road traffic volume, with the position, date, and measurement time interval, the prevailing meteorological conditions, the contact details and name of the measurement manager were recorded in a results sheet. In the case of systematic excess of the current limit for road traffic noise recording, the construction and operation of the project entity shall take the necessary measures to address the excesses.

- Before each 24-hour traffic noise measurement, calibration of the instruments was

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performed using specific acoustical calibrator, so that the reliability of the results be monitored during the recordings of the traffic noise environment.

• The following are mentioned for all measurement positions: the exact position, the exact time period and day of measurement, while it is noted that the measurement was performed under lack of rain and strong wind conditions, while for conditions of light wind, speed < 3 m/sec, always the use of a special windbreaker cover for the microphone was ensured. No traffic noise recordings were performed if other sources of noise pollution were noted in the immediate environment of the recording position, e.g. residents gatherings, construction of roads, buildings etc., or if the traffic flow was not the usual (e.g. weekends or holidays), or if the traffic fluidity was interrupted or disturbed from any random event, such as accident, etc.



In every 24-hour measurement, the following were recorded:

- the L1, L10, L50, L95, L99 indexes as well as the maximum (Lmax) and minimum values (Lmin);
- the O.K.TH. (Road Traffic Noise) level L10 (18-hour); & the level A-weighted equivalent LAeq (08.00–20.00);
- the level A-weighted equivalent LAeq (24h); and
- the Lden, Lday, Levening & Lnight indexes, as well as the Ld-e of existing legislation in line with JMD with No 211773/2012 (FEK 1367/B/27-4-2012).

For 2019, the monitoring program of the Road Traffic Noise has been completed and approved. For 2020, a similar program will be implemented, which is expected to be completed within the year (recording of 24-hour measurements in selected positions), when it shall be submitted to the Noise, Vibration and Radiation department of the Directorate of KAPA/YPEN for approval.

Finally, it is noted that daily monitoring of the traffic volume is performed both on the PATHE motorway, “Skarfeia – Raches” Section, and the Central Greece motorway (E65), “Xyniada – Trikala” Section, at the transit level at the toll stations, and monthly reports are submitted. For 2019, the Annual Average Daily Traffic (AADT) calculation equals to 10.480 transits for both directions for the PATHE motorway, “Skarfeia – Raches” Section, while for the Central Greece motorway (E65), “Xyniada – Trikala” Section, the calculation equals to 2.167 transits for both directions.

The tables below show the kilometers of 24-hour measurements in all sections of the motorway. In detail:

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Section: Skarfeia – Raches

S/N MEASUREMENT	AREA	DIRECTION	CH.
Θ1	Anthili	To Lamia	209+400
Θ2	Anthili	To Lamia	209+800
Θ3	Roditsa	To Athens	213+900
Θ4	Megali Vryssi	To Athens	215+400
Θ5	Megali Vryssi	To Athens	215+700
Θ6	Stylida	To Raches	227+050
Θ7	Stylida	To Raches	227+200
Θ8	Stylida	To Raches	228+300
Θ9	Stylida	To Athens	232+600

Section: Xyniada – Trikala

S/N MEASUREMENT	AREA	DIRECTION	CH.
Θ10	Anavra	To Trikala	57+150
Θ11	Anavra	To Trikala	58+100
Θ12	Anavra	To Lamia	59+300
Θ13	Mavrahades	To Lamia	66+750
Θ14	Ag. Theodoros	To Lamia	80+100
Θ15	Loggos	To Trikala	105+900
Θ16	Loggos	To Trikala	106+000

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8. WASTE MANAGEMENT

8.1 Liquid wastes

A comprehensive Environmental Management Plan has been developed and implemented, which includes the procedure for the management of hazardous liquid waste in accordance with the environmental terms and the existing legislation, while proper management documentation is requested by the subcontractors. Relevant archive has been created with the agreements and waste delivery receipts of authorized mineral oil management companies.

For the hazardous liquid waste resulting from the operation and maintenance works on the motorway, the concession company follows all procedures provided by the current legislation and cooperates with management entities authorized for environmental purposes.

Inspections are performed at the construction and maintenance work sites and the corresponding check list is filled. Based on the checks, in case of failure to comply with the provisions, guidelines (corrective actions) for compliance are provided. The implementation of the corrective actions is checked through new inspections based on the check list.

Furthermore, the concession company submits annual reports for waste producer at the electronic waste registry (EWR) pursuant to Article 42 of Law 4042/2012 (FEK 24/A/13.02.2012), as amended by Article 157, paragraph 1 of Law 4389/2016 (FEK 94/A/27.05.2016) and JMD 1/1 (FEK 1/B'/04.01.2017). For the year 2018, the relevant report of waste producer was submitted to the electronic waste registry (EWR) by the concession company for every JMD ETA of the motorway separately. For 2019, the procedure is expected to be completed according to the foreseen deadlines.

8.2 Solid wastes

The Concessionaire has contracted with the subcontractor for the cleaning and the collection of solid waste from the motorway, which are then transferred to appropriate licensed premises.

For the hazardous solid waste resulting from the operation and maintenance works on the motorway, the concession company follows all procedures provided by the current legislation and cooperates with management entities authorized for environmental purposes.



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Inspections are performed at the construction and maintenance work sites and the corresponding check list is filled. Based on the checks, in case of failure to comply with the provisions, guidelines (corrective actions) for compliance are provided. The implementation of the corrective actions is checked through new inspections based on the check list.



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8.3 Waste Producer Table – EWR

Pursuant to Article 42, of Law 4042/2012 (FEK 24/A/13.02.2012), as amended by Article 157, paragraph 1 of Law 4389/2016 (FEK 94/A/27.05.2016) and JMD 1/1 (FEK 1/B'/04.01.2017), the Electronic Waste Registry was established, and by JMD 43942/4026 (FEK B' 2992/19.09.2016), liable for the electronic recording and registration are every organization or enterprise the establishments of which produce waste and falling within the scope of Chapter A of Law 4014/2011 (A' 209).

The company responsible for the operation of PATHE motorway, "ODOS KENTRIKIS ELLADOS S.A.", was registered in the Electronic Waste Registry (Reg. No 3959), as it falls within the scope of the provisions of Law 4014/2011. Pursuant to DIPA No DIPA/ 37674/2016 (FEK

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2471/B/10.08.2016), PATHE (Skarfeia – Raches Section) and E65 motorways fall under Group 1 projects (Air and land transportation projects) – Road building, S/N 1, and under subcategory A1.

Fluorescent tubes and other mercury-containing waste, lead batteries, tires collected from the motorway, engine, gear and lubricating oils, iron and steel, plastics, animal tissue waste (dead animals), plant-tissue waste, and waste produced by the operation and maintenance works on the motorway and the quantity and delivery mode to each approved Alternative Management System of which is recorded.



Moreover, the company responsible for the operation ODOS KENTRIKIS ELLADOS S.A., in the context of corporate social responsibility, has contracted Alternative Management System companies and recycles paper, plastic, batteries, used/damaged electrical and electronic equipment. Additionally, the company responsible for the operation has a certified environmental management system ISO 14001/2015.

For the year 2018, the relevant report of waste producer was submitted to the electronic waste registry (EWR) by the concession company for every JMD ETA of the Concession Project

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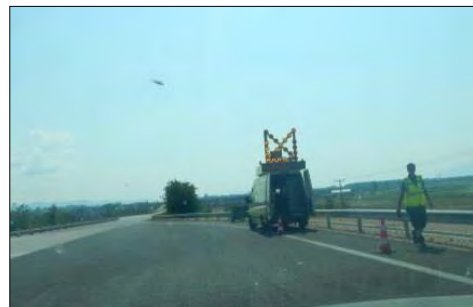
separately. For the year 2019, the procedure is expected to be completed according to the foreseen deadlines.

For all previous years (before the operation of EWR), ODOS KENTRIKIS ELLADOS S.A. has prepared and submitted the relevant reports for waste producer pursuant to JMD 13588/725/06 and on the basis of Law 2939/2001 (and its amendment Law 3854/2010).

9. CLEANING AND MAINTENANCE

All cleaning and maintenance work taken place during 2019 and for which the compliance with the Environmental Terms was checked, are the following:

- Vegetation pruning and maintenance.
- Drain and culvert cleaning and maintenance.
- Advertising billboard removal.
- Sweeping.
- Parking Area cleaning and washing.
- Bins replacement.
- Metal rails replacement.
- Metal safety rails replacement.
- Fencing repairs after accidents.
- Rodent extermination and tunnel gutters inspection.



For all the above works, monthly inspections are performed that ensure compliance to the E.T., while in the relevant Reports, the check lists and corresponding tables per JMD are included.

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10. ACCIDENTS – ACCIDENTAL POLLUTION – ACTION PLAN

The Concessionaire has prepared an Action Plan for emergency situations, in which the measures for the timely collection and removal of hazardous substances after a relevant incident on the motorway are described, designed to prevent the pollution of waterways, soil, or wider environment of the motorway.

The Plan is an Appendix to the Police and Firefighting Agreement conducted between the Concessionaire and the Ministry of Interior, the Police and the Fire Department and includes all the measures to be taken and the necessary equipment to be used by the Concessionaire in case of an accident and leakage of non-biodegradable substances.

It is also highlighted that during incident of hazardous cargo management, the competent bodies of the Fire and Traffic Departments shall be entirely in charge of the coordination. The Concessionaire's role is auxiliary with a focus on the traffic management (signs, blocks, diversions) at the direction of the relevant departments, the restoration of the road surface (cleaning, obstruction removal, etc.) and infrastructures (damages, rails restoration, etc.) and the re-opening of the relevant road after the end of the incident.

As primary and essential tool for addressing accidental leakage, which creates an immediate risk of surface water and soil pollution, the use of adsorbents, such as sand, sawdust, or special geotextile is provided immediately after the escape of the hazardous cargo. Such materials are immediately available by the Concessionaire, the patrol units and the maintenance contractor for direct intervention.

The decontamination process, as well as the transportation and absolute management of contaminated absorbent of the polluted adsorbents and the hazardous waste produced by such an incident shall be done in accordance with the existing legislation, by appropriately licensed companies for the decontamination, transportation and management of hazardous waste, with the aim of timely response to highway accidents.

It is noted that, upon completion of unfinished State contracting works at sections of PATHE E65, the pollutant retention tanks have been constructed and delivered to the Concessionaire, as provided by JMD ETA 146113/12-07-2005 for the "Skarfeia – Thermopyles" section.

It should be pointed out that, when the contract works are finished and delivered by the government, the Concessionaire shall implement plan to address the pollution, which will include the use of the said tanks in compliance with the E.T. and the contractual obligations.

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11. SPECIAL TERMS (E.G. TANKS, DRAINAGE MANAGEMENT)

It should be pointed out that the polluted leaching temporary retention tanks at the “Total Stylida – Karavomylos Bypass” section, which are required to be constructed by the E.T. d-13 of JMD 100198/30.05.2006, have been constructed.

12. PLANTINGS – MAINTENANCE OF VEGETATION

The Concessionaire has contracted with a Subcontractor for the maintenance and management of the vegetation and the plantings.

13. CONCESSIONAIRE'S ENVIRONMENTAL DEPARTMENT

The Concessionaire provides an Environmental department with specialized personnel, which is responsible for the inspection and compliance with the E.T. of the motorway entire length. The Concessionaire is also cooperating with special advisor in order to create a group of scientists that covers the extended range of the environment. The group of scientists consists of Civil Engineer – Transportation Expert – Acoustical Engineer, Environmentalist – Environmental Planner, and Environmentalist – Chemist – Acoustical Engineer, to fully meet the inspection needs of the E.T. for the road project.



14. REPORTS (SEMI-ANNUAL – ANNUAL SUBMISSIONS)

For the year (2019), the 1st semi-annual Report of Environmental Monitoring 2019 of the Concession Project under study, which has been submitted by the Concessionaire under prot. no. 21314/20.08.2019 letter of the Supervisory Authorities and GPDD/YPEN, has been drafted.

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15. MONTHLY FOLLOW UP – CHECK LISTS

Based on the Environmental Monitoring and Control Program and the Environmental Management System, the “Tables for the Implementation of the Environmental Terms” are established, outlining the ways and methodology of the necessary actions, in order to ensure the implementation of the Environmental Terms.



Environmental managers, in collaboration with the project engineers, perform regular (monthly) checks and complete the control tables, i.e. the implementation of the "Environmental Monitoring and Control Program". They also provide the necessary guidelines or directions based on the Environmental Monitoring and Control Program for any environmental issue that arises.

After each regular (monthly) check, the corresponding checklist is filled out, which shows deviations from the implementation of the environmental terms identified by the inspections. The same table provides the proposed corrective actions. The tables are sent to the company responsible for the operation to take all necessary actions and the appropriate measures to comply with the environmental law and the environmental terms of the project. In the following recheck, it is examined whether all the necessary measures and the proposed corrective actions have been taken and the corresponding fields of the monthly checklist are filled.

The Environmental Management System (EMS), which is implemented by the company responsible for the operation, consists of the Manual, the Procedures, the Work Instructions related to the environment and the compliance with the environmental requirements of the project. The environmental management manual, procedures and instructions are applied uniformly throughout the project and are constantly evolving to meet project needs.

16. INSPECTIONS BY ENTITIES – FINES

For the year 2019, no environmental deterioration problems have been identified caused by the operation and maintenance of the motorway, and no fines have been imposed on the company responsible for the operation.

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17. CERTIFICATIONS

ODOS KENTRIKIS ELLADOS S.A. has developed and implemented a common Integrated Management System (IMS) resulting from the integration of the Quality, Environment and Safety & Health Systems applied by the company. The aim of the IMS is to ensure the most efficient management of quality, environmental and S&H issues by eliminating overlapping procedures and controls.

Additionally, ODOS KENTRIKIS ELLADOS S.A. has designed and implemented a Road Safety Management System, which has been certified according to the international standard ISO 39001:2012, making it the first second generation Concession Company to receive such certification, which is a milestone for the safe and efficient fleet management, and demonstrates the company's commitment to implement safe practices on the motorway.

Collectively, ODOS KENTRIKIS ELLADOS S.A. is certified according to the following International Standards:

- ISO 9001 (Quality Management System)
- ISO 18001 (Health & Safety Management System)
- ISO 14001 (Environmental Management System)
- ISO 39001 (Road Traffic Safety Management System)

On 10-11/10/2019, the planned annual inspection was carried out by the independent certification body Bureau Veritas on all activities of ODOS KENTRIKIS ELLADOS S.A. and in accordance with the International Standards: ISO 9001 (Quality Management System), OHSAS 18001 (Health & Safety Management System), ISO 14001 (Environmental Management System). Following the inspection, the independent body recommended the continuance of the Certification for all standards and for at least one year until the next scheduled annual inspection.

On 3-4/7/2019, the planned annual inspection on the Management System ISO 39001 (Road Safety) was carried out by the independent certification body TUV Hellas.

Following the above inspections, the independent bodies recommended the continuing Certifications for all standards and for at least one year, until the next scheduled annual inspections.



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18. ENVIRONMENTAL BUDGET

The required percentage for the total operating and maintenance of the motorway budget required to fully comply with the Environmental Terms and restrictions of the relevant JMD-ETA has been secured as a matter of priority. Expenditure on environmental protection projects is given in the annual progress reports on compliance with the Environmental Terms.

Investment Categories for the Environment	2019 (in €)
Environmental Studies (EIS, TEPEM, EPO renewal Studies, Environmental Licensing of Adjacent Projects and activities, etc.)	
Vegetation Maintenance	
Traffic noise monitoring program	
Environmental Advisors and personnel for monitoring the implementation of the E.T.	
Procurement of the air pollution monitoring equipment	
Operation of Atmospheric Pollution and Meteorological Data and Air Pollution Monitoring Stations	
Certifications It refers to the cost of the Company's Integrated System which includes (ISO 9001:2015/ ISO 14001:2015)	
Environmental education and training	

19. CORPORATE SOCIAL RESPONSIBILITY

ODOS KENTRIKIS ELLADOS S.A. compiles a Corporate Responsibility Report in accordance with the Global Reporting Initiative (GRI) standard, the GRI Standards, and meets the Baseline Selection criteria (in accordance with: Core option).

The Report covers all the core and substantial issues that the company has identified and focuses on, including environmental issues.

The Reports are issued on an annual basis and cover the 5 Corporate Responsibility pillars for Operation & Maintenance activities:

- Road Safety
- Quality on Provision of Human Resources Services
- Caring for the Environment
- Collaboration with Local Communities and Social Contribution

The Corporate Responsibility Report is posted at <http://www.kentrikiodos.gr>.