



**8TH SEMI ANNUAL
ENVIRONMENTAL
MANAGEMENT REPORT
01.01-30.06.2012**

Environment Department OLYMPIA ODOS S.A.





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Introduction

Based on the Concession Agreement (articles 11.2.2& 16.2), OLYMPIA ODOS S.A. is obliged, throughout the entire Concession Period to deliver to the Concessionaire, a semester environmental report, within a period of a month since the final documentation. This is the eighth semi - annual Environmental Management Report and covers the period 01.01.2012 to 30.06.2012.

In the internet site www.olympiaodos.gr which was created and run by the Concessionaire, in accordance with the Concession Agreement, shall become public the above six-month and annual report.

During the motorway's construction and operation, both the constructor as well as the operator comply with all pertinent provisions, as they are recorded in the Greek Legislation, ensuring the same for their contractors and subcontractors.

Note: all appendices of the present report have been submitted to the Special Environment Service of the Ministry of Environment, Energy and Climate Change, responsible for the environmental supervision of the OLYMPIA ODOS project and are available upon request.

Appendices

- APPENDIX 1 Section: Elefsina - Korinthos (excluding Kakia Skala) (CDM 126393/16.02.2007)
- APPENDIX 2 Section: Ancient Korinthos I/C – K1 Patra By-Pass I/C (CDM104892/16.06.2006)
- APPENDIX 3 Section: Midilogli I/C - Amaliada (CDM102696/30.05.2006)
- APPENDIX 4 Section: Amaliada – Pyrgos - Tsakona (CDM 100163/30.05.2006)
- APPENDIX 5 Archaeological investigations for Korinthos – Patras – Pyrgos - Tsakona
- APPENDIX 6 Quantitative data regarding environmental protection during construction and operation

Project's progress



Construction of the motorway

The work's progress of the Design-Construction Project contractual scope is notified to the Concessionaire, the Independent Engineer and the EYDE/MK/EPP through a Monthly Progress Reports, which are elaborated by APION KLEOS Construction Joint Venture as required by the contractual document. In Table 2 below is briefly presented the Project's works progress in the 1st half of 2012.

Please note that in the beginning of the 2nd half of 2011 and within the framework of the negotiations between all involved parties for the Concession Project's restructuring, the Concessionaire instructed the Construction Joint Venture to suspend all works until 30-09-2012. Hence the limited nature of the executed works.

PROJECT'S WORKS PROGRESS IN THE FIRST HALF OF 2012

G.U.	ACTIVITY	PROGRESS
1-3 & 35	Maintenance & small works related to safety issues (asphalt repairs, traffic arrangements, road marking, etc).	Continuous process
4-15	Maintenance & small works related to safety issues (asphalt repairs, traffic arrangements, road marking, etc).	Continuous process
16-17	Traffic Management.	Continuous process
	Construction of Storage House of 25th EBA in Ancient Korinthos.	In progress.
	Construction of New Storage House of 25th EBA in Ancient Korinthos.	Completed and handed over to the State.
	Maintenance & small works related to safety issues (road marking, etc).	Continuous process
18-21	Traffic Management.	Continuous process
	Restoration, rectification of irrigation network.	Continuous process
	Cleaning and repairing of trenches / culverts and other hydraulic works.	Continuous process
	Restoration of damaged local roads.	Continuous process
	Maintenance & small works related to safety issues (road marking, etc).	Continuous process

22-25	Traffic Management.	Continuous process
	Storm-protection works .	Continuous process
	Monitoring of convergences displacement conducted by electronic topographical equipment in comparison with the referenced values and the warning and alarm levels at Tunnels 11, 13A & 13B.	Continuous process
	Maintenance & small works related to safety issues (road marking, etc).	Continuous process
26-29	Traffic Management.	Continuous process
	Monitoring of convergences displacement conducted by electronic topographical equipment in comparison with the referenced values and the warning and alarm levels at Platanos Tunnel 15 (South & North bore).	Continuous process
	Geomechanical and structural monitoring of Platanos village.	Continuous process
30-34	Traffic Management.	Continuous process
	Anti-flood protection works at Tunnel 26.	Continuous process
	Monitoring of convergences displacement conducted by electronic topographical equipment in comparison with the referenced values and the warning and alarm levels at Tunnel 26.	Continuous process
	Maintenance & small works related to safety issues (road marking, etc).	Continuous process
36-38	Traffic Management.	Continuous process
	Maintenance & small works related to safety issues (road marking, etc).	Continuous process
38-41	Traffic Management.	Continuous process
	Maintenance & small works related to safety issues (road marking, etc).	Continuous process
41-42	Traffic Management.	Continuous process

FEBRUARY 2012



Excavation of foundations – 25th EBA



Improvement layer – 25th EBA



Steel Reinforcement of foundation – 25th EBA

MARCH 2012



Asphalt coating – 25th EBA



Foundation embankment – 25th EBA



Ground slab – 25th EBA



Ground slab – 25th EBA



Ground floor columns – 25th EBA



Ground floor upper slab – 25th EBA

APRIL 2012



Steel Reinforcement upper slab - ground floor – 25th EBA



Concreting upper slab - ground floor – 25th EBA



Exterior Masonry - ground floor – 25th EBA

MAY 2012



Concreting 1st floor columns and beams- 25th EBA



1st floor columns and beams- 25th EBA



Exterior Masonry - ground floor - 25th EBA



Exterior Masonry - ground floor - 25th EBA



Interior Masonry - ground floor - 25th EBA



Exterior Masonry - 1st floor - 25th EBA

JUNE 2012



Exterior Masonry - 1st floor – 25th EBA



Exterior Masonry - 1st floor – 25th EBA



Roof Construction – 25th EBA



Roof Construction – 25th EBA



Roof Construction – 25th EBA



E/M installations – 1st phase - ground floor – 25th EBA



Operation of the motorway

In the framework of the Concession Agreement for the Project of the Motorway Elefsina-Korinthos-Patra-Pyrgos-Tsakona (Act 3621/2007), the company "Olympia Odos Operation S.A." has undertaken since 6th August 2008 on behalf of the Concessionaire (Olympia Odos S.A.) in Phase A the Operation of the road section from Elefsina (Thiva I/C) until the end of Patras Bypass (Mintilogli), as it was received in its existing condition of total length 202 km.

This road section includes also the section of the (former) National Road from Korinthos to Patras, conventionally called in the Project "Korinthos-Patra NNR" of total length about 120 km.

More specifically, the Project during Operation Phase A includes:

28 interchanges

(7 of which semi-interchanges)

2 groups of tunnels

(Kakia Skala and Patras Wide Bypass)

4 mainline toll plazas

(Elefsina, Isthmos, Zevgolatio and Rio)

2 ramp toll stations

(one in Nea Peramos I/C and one in Agioi Theodoroi I/C)

Toll service/administration buildings

Tunnel service, control and power supply buildings

6 Motorist Service Stations (MSS):

Megara MSS (in both directions), Korinthos MSS (direction to Athens), Kiato MSS (in both directions), Akrata MSS (in both directions), Aigio MSS (in both directions), Rio MSS (direction to Athens)

45 parking and rest areas

Progress of the environmental agenda

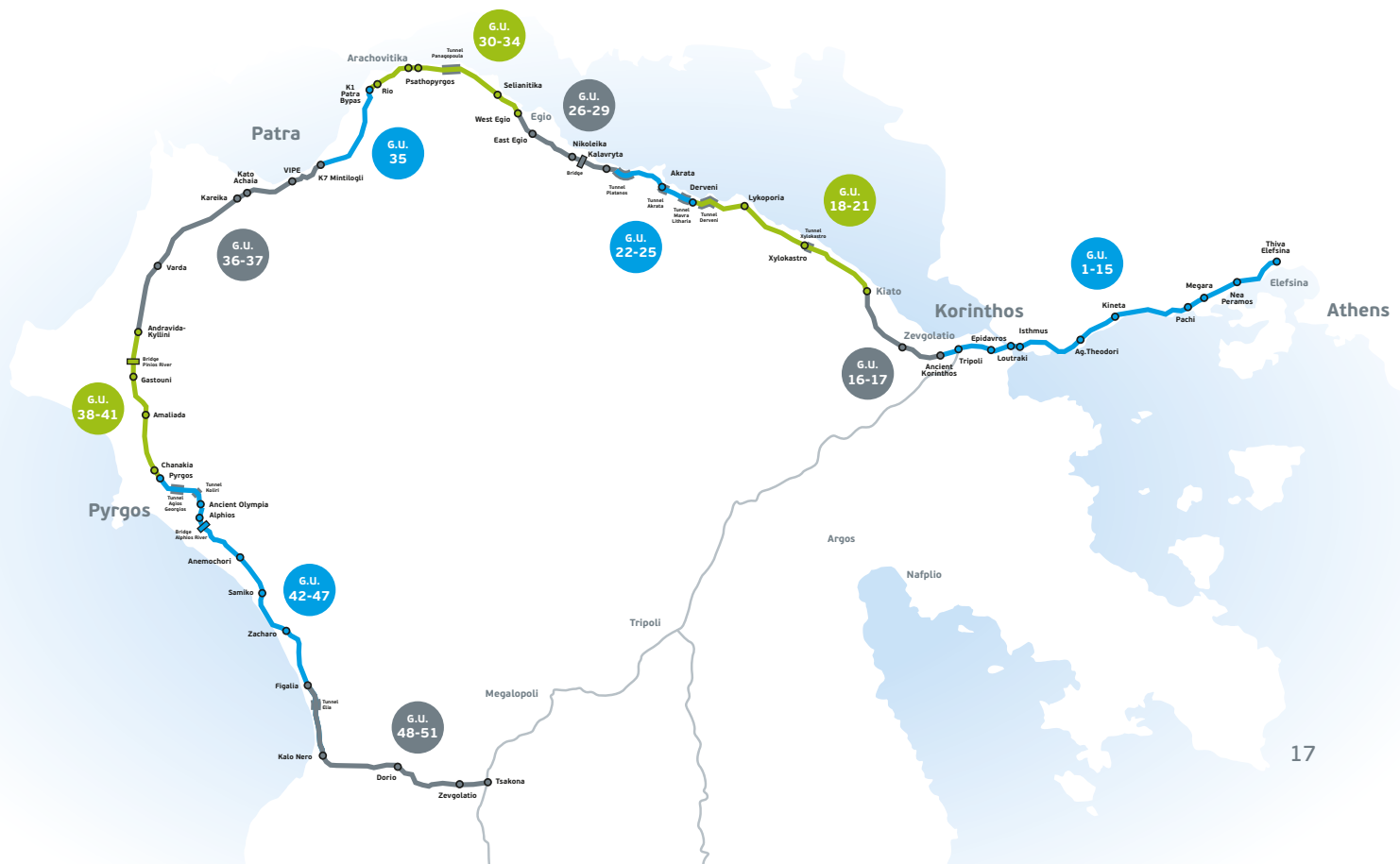
General

The course – progress of the Project’s construction activities is submitted by APION KLEOS Construction Joint Venture to the Concessionaire via the design - construction monthly progress reports.

Appendix A of Annex 2 of the Concession Agreement states the Common Ministerial Decisions (CMD) and the Law comprising the Project’s environmental licensing and forming the main framework for the monitoring of the progress of the Project’s environmental issues.

More specifically:

1	Law 2338/1995 Thiva I/C – Elefsina Toll Plaza
2	CMD 126393/16.02.2007 Elefsina – Korinthos (excluding Kakia Skala section)
3	CMD 108569/18.10.2006 Kakia Skala
4	CMD 92073/16.05.1994 Isthmos – Ancient Korinthos I/C
5	CMD 104892/16.06.2006 Ancient Korinthos I/C – Patra By-Pass K1 I/C
6	CMD 106321/28.07.2006 Patra By-Pass K1 I/C – Mydilogli Semi-I/C
7	CMD 102696/30.05.2006 Mydilogli I/C - Amaliada
8	CMD 100163/30.05.2006 Amaliada – Tsakona



In the construction as well as in operation phase, the procedures and directives for the works' environmental management are implemented by the Constructor, aiming at the in compliance with the terms and constraints of the above decisions.

In the frame of its contractual obligations, the Construction Joint Venture has developed an Environmental Management System (EMS) in accordance with ISO 14001:2014

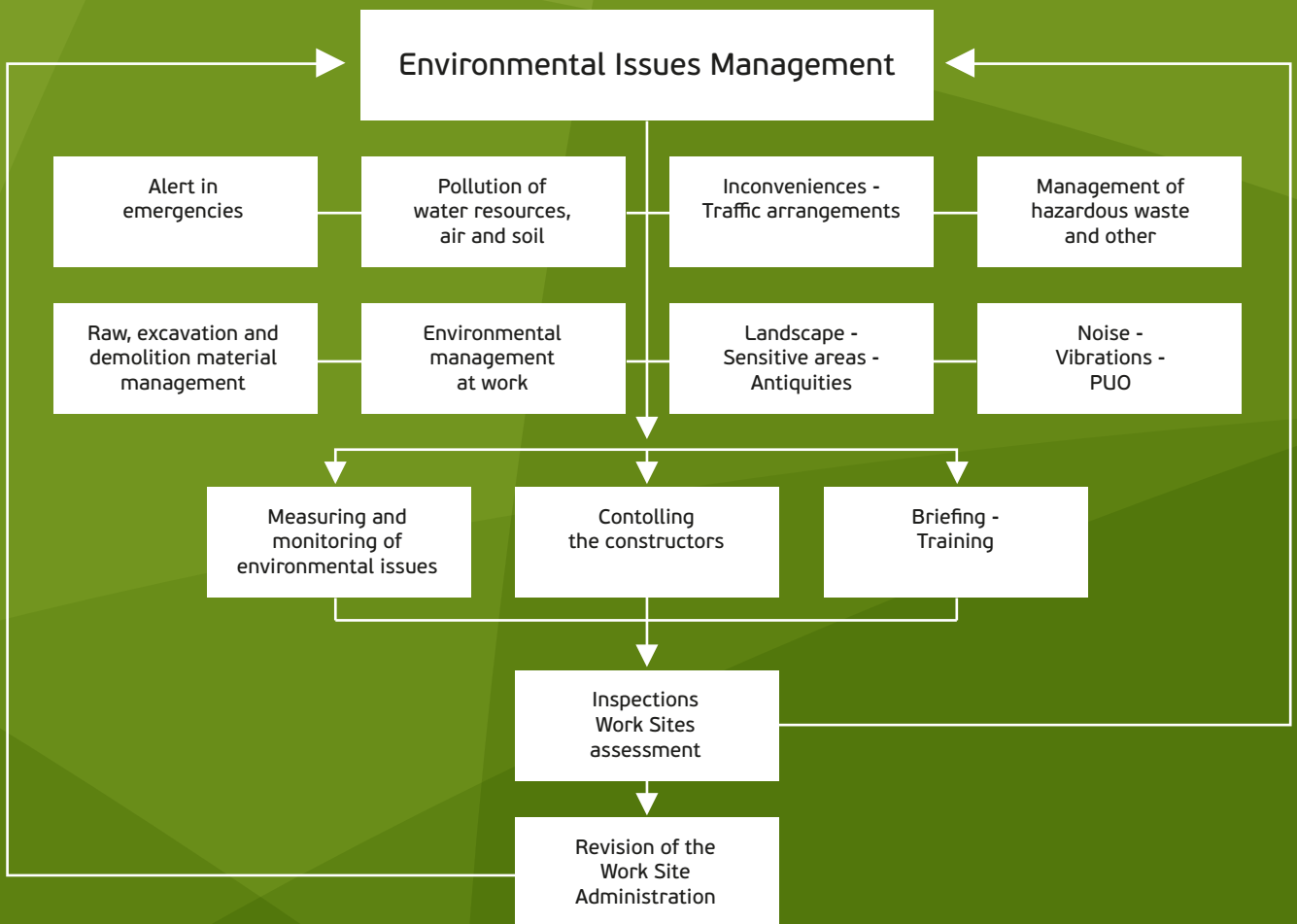
The EMP includes the organizational structure, planning actions, duties allocation, technical methods, procedures as well as processes for the development, implementation, achievement, revision and support of the Constructor's environmental policy as well as the compliance with the Project's environmental terms.

The EMP constitutes the basic and general framework for the management of environmental issues, whereas the procedures and directives refer to the rational

means and handling/ management of each environmental issue, taking into account the pertinent legislation and the decisions applicable to each case.

This EMS is available to all institutional parties related to the project.

Along with the 2rd Annual Report the competent Services (EYDE/MK/EPP & EYPE/MEECC) were provide with a digital copy of the Project's EMP as well as the environmental management procedures.



The Operator in order to comply with the Project's environmental terms and the implementation of an Environmental Policy has developed and implements a **Environmental Management Plan** for:

- controlling, monitoring and dealing with the environment impact of the project
- optimum management of liquid and solid waste of the Project
- promotion of optimum practices to reduce energy and resources consumption

Permits - Designs related to construction

In the framework of complying with the Concession Agreement environmental requirements, the approved environmental terms and the required environmental permits:

- a** Requests are submitted, when required, in order forest and archaeology related permits and official opinions to be issued.
- b** Special Technical Implementation Designs (STID) and when required, Technical Exploitation Designs for related works are compiled and submitted to EYPE/MEECC in order to obtain approval and permit. In herein 1, 2, 3 & 4 Appendices are presented in detail all the submitted/ approved studies in first semester of 2011.
- c** Cooperation is in progress with the Public Utility Organisations in order to relocate various networks located within the Project.
- d** Hydro geological Design (AQUATERRA – Ch. Kapopoulos - E. Psarropoulou & Co) has been submitted to the competent Public Service. The above pertains to the excavation of eleven (11) new water collection works, so as to cover the irrigation, fire fighting and other needs that shall arise in the Project's short-term parking areas.

Environmental management, waste management, hazardous and non hazardous materials

During the motorway's construction and operation, both the constructor and the cooperating contractors and sub-contractors shall comply with all pertinent provisions, as they are recorded in the Greek Legislation.

Within this framework the "Environmental Legislation Monitoring Procedure" has been drafted, incorporating all existing pertinent legislation and updated in case the latter is amended or updated. The specific procedure shall be copied to all parties who are obliged to then copy it to all cooperating sub-contractors.

Waste of any nature is managed based on the pertinent legislation and the constraints/ requirements imposed by the approved environmental terms, both for the Project's existing and new sections.

The respective "Waste Management Procedure" has been prepared for the management of waste, documenting the existing legislative framework and the means/ directives for their management.

The respective "Water Resources Management Procedure" has been prepared for the management of water resources, presenting in detail all the constructor's actions contributing to the minimization of the adverse impact the construction has on the adjacent water resources.



Nea Peramos OMC



Nea Peramos OMC



Kiato TB



Akrata TB

The respective "Hazardous Materials Selection and Procurement Procedure" has been prepared describing all the constructor's actions contributing to the prevention of the uncontrollable use of hazardous materials during the Project's construction period.

The quantitative results and environmental performance for both construction and operation, regarding materials recycling, mineral oil, batteries, vehicle tyres, hazardous materials management, pollution incidents, area restoration, excavation and demolition products for the 1st half of 2012 are briefly presented in appendice 6.

Environmental parameters, monitoring programme (noise, traffic load vibrations, air quality, water)

The Constructor, based on the relevant study, designs, elaborates and implements a programme for the Project's environmental monitoring and audit, in order to ensure compliance with the Project's environmental requirements.

By this programme, environmental factors as noise, water and air pollution, waste, social disturbance, antural wealth, sensitive areas etc. are monitored

The respective process for Patra – Pyrgos section is also temporarily suspended.

In application of article 5 law 3010/2002 and in accordance with the provisions of article 11.2.1 of the Project's Concession Agreement the CJV proceeded in the elaboration of stream delineation designs (D. Sotiropoulos & Co & L.S. Lazaridis & Co) for the stream's section extended along the Projects construction zone or abutted to it and along Korinthos - Patras section for five hundred meters downstream. The designs are being submitted to the Technical Services of the local Regional Units Administrations for approval and any other administrative act necessary in order to be rendered fully effective.

Environmental impact mitigation measures during construction

a. Geomorphology - Soil

In order to protect the soil from fuel leaks etc special areas with sealed floor and graded collection culvert ending in a sedimentation basin are provided for rinsing the machinery.

In the maintenance areas for the machinery or in other suitable and safe area, used oils from black oils change are temporarily stored. The management of the used black oils shall be in accordance with the provisions of PD 82/2-3-2004. The PD gives priority to collection and disposal black oils for regeneration treatment.

All necessary measures are taken in order to avoid erosion or filtration at the slopes during the tunnel construction and the water and clay supply to the final acceptor. Before being disposed of, the sediment is being treated in appropriate sedimentation tanks.

b. Geology

Special attention shall be paid during construction of sections passing by geologically sensitive zones, as in those areas stability problems might emerge at the formations. In those sections shall intervene as little as possible.

c. Ecosystems - Vegetation

In the areas where the technical structures are constructed, and mostly in the areas where bridges are constructed, all the necessary precautions shall be taken in order to avoid any impact on the riverside ecosystems. All possible efforts shall be made in order to use the fewer possible quantity of concrete. Where possible the use of gabions is preferred and the proper application/use of additives (e.g. bentonite), which are used in order to add improved features to the boring effluents during the borings.

In some case the cleared vegetable materials are cut and temporary stored in mounds in order to create organic fertilizer for future use in planting technical activities.

After clearance, excavation, collection and temporary disposal of the superficial fertile soil layer follows.



Vegetation, planting and road cleaning

The vegetation and planting pertain to the environmental integration and protection of the areas adjacent to the project.

Existing Sections

In order to facilitate the fulfillment of the above obligations, a Final Planting Design (S. Voutsinos & Co) for the surrounding areas, the respective I/Cs, slopes and median strips was elaborated for Elefsina – Korinthos section. This design was approved by the project's Independent Engineer.

The planting of Patra By-Pass is in very good shape due to its "recent" construction and maintenance for the last period of time.

New Sections

In order to facilitate the fulfillment of the above mentioned obligations the Construction Joint Venture conducted a relevant tender in order to find the suitable designer (agronomist, landscape architect) for the development of Planting-Technical Design for Korinthos – Patra section.

The designer (Klea Volovini) undertook the project, the relevant agreement was made and the data collection commenced towards the development of the Planting-Technical Design for the surrounding area, the respective I/Cs, embankment/cut slopes as well as the sections of the existing national road which will not be included in the motorway. The process is temporarily suspended.

Cleaning

During the 1st semester of 2012, the OLYMPIA ODOS OPERATION S.A. (OPERATOR)'s personnel in collaboration with external subcontractors carried out and still does regular cleaning works along the entire project (202 km), in the 28 interchanges, the toll stations (lanes, booths, pavement, surrounding area, buildings), in the tunnels and in the 45 parking areas (washing, sweeping, waste removal from bins and surrounding areas).

It is noted that the cleaning pertains to the entire cross section until the expropriation limits.

The Operator's personnel and the competent subcontractors carried out regular trimming, weeding and cleaning works for the most part of the project, and specifically of 97 km of central reserve, 402 km of shoulders and of the 28 interchanges and their branches, as well as of the 45 parking areas.



View of Elefsina-Korinthos section

Management of extraordinary incidents, environmental accident, green areas fires

Based on the "Emergency Procedure", there is a provision for the management and handling of "green areas fire" incidents, as well as for environmental accidents, such as substance leakage on the carriageway etc.



When working sites operate, all fire prevention measures are taken in order to prevent fire from working machinery, working teams, transportation of explosives and to minimize the danger of convection to the adjacent areas. The way according which the fire belt is organised, was controlled and approved by the competent Fire Service before the beginning of the works.

Specifically, fire management measures are taken in order to protect forest vegetation on road's either side.

Within the framework of elaborating the fire hoses designs along the EKPPT motorway, maps were prepared depicting the forest land for "Elefsina – Korinthos", "Ancient Korinthos I/C – Patra By-Pass K1 I/C" and "Patra By-Pass K1 I/C – Midilogli Semi-I/C" sections.

In the framework of road safety, Olympia Odos Operation S.A. has Patrollers and Intervention Teams patrolling the Project with specially marked vehicles dealing with incidents (immobilized vehicles, accidents, traffic problems etc.) by implementing temporary signage to safely arrange traffic and assist the emergency services (Police, Fire Brigade and Paramedics). In this framework, during the first semester of 2012:

- 1.806.807 (about 9.900 per day) kilometers of Patrols and Interventions were covered to supervise the road network
- 22.264 incidents were handled with the Company's assistance, such as: 5.881 immobilized vehicles (mechanical failure, flat tire, lack of fuel, abandonment), 4.047 obstacles on the pavement, 582 road accidents (14 with injured and 568 with material damage), 461 user problems (pedestrians, vehicles moving in the opposite direction, non authorized users, dangerous traffic violations), 53 traffic congestions and 241 other emergency incidents (fire, adverse weather conditions, etc.) out of which:

- 6.478 were handled immediately by the Company, since they were detected (located) by its own vehicles, or by its subcontractors' vehicles
- 4.786 incidents were handled within 12' in average by the Company, since they were otherwise detected (phone, cameras etc.), while regarding the response of the subcontractors respectively: 17' for light vehicles and 31'' for heavy vehicles

The company's competent personnel (Intervention Teams) implement on a daily basis temporary signage for incidents and for the safe execution of works carried out on the road either by the Operation Company or the Construction Joint Venture. Regarding Korinthos-Patra NNR special attention is paid due to its features (no central reserve) and the sections with steep turns and limited visibility.

The Constructor shall work and cooperate closely with the Environmental Service and other departments of OLYMPIA ODOS S.A. in the application of the procedures – directives for the management of such issues.



Antiquities

Under the principle that cultural heritage and antiquities along the motorway shall be protected, a principle that constitutes prerequisite for the construction of the road, the Constructor has direct contact and collaboration with the competent archaeological services. According to the Concession Agreement and the Design – Construction Contract, the Construction Joint Venture is responsible for the execution of archaeological investigations pursuing a recommendation by the pertinent archaeological service.

Works in the positions indicated in the Concession Agreement (article 13.1) and where there is a great potential of Antiquities being revealed are in progress.

Antiquities detailed data/ activities are reported in the herein Appendix 5.



SIKYONA (MOULKI) K.P. 17+100 KO-PA section
Architectonical ruins excavation

Training – awareness raising and inspection

Environmental training aims to reinforce knowledge and raise awareness about the environment, to develop the necessary skills, to form the right behaviour, to activate and make informed decisions and responsible actions.

The Construction Joint Venture is organizing training and briefing seminars whereas all internal inspections are accompanied by the training and briefing of all competent persons at working sites regarding issues and developments pertaining to the environment.

Each working site's environmental engineers are regularly organising meetings with all parties involved in the Project's construction, providing them with the suitable training and briefing.

The Construction Joint Venture's Environmental Department in cooperation with the project engineers conduct regular inspections, give the necessary instructions or directions pursuant to the Project's EMP regarding any arising environmental issue. To fulfill that goal, special reports are elaborated documenting the test results, proposing measures to deal with any environmental issues identified and accompanied by a complete photographic survey.

Environmental training during the Project's construction is divided in 2 categories. The first one pertains to the specialized environmental training of the staff related to the Project's environmental management (environment engineers, foremen in sensitive areas) and the second one to the general environmental training of the whole staff. The following table describes the whole number of hours (persons x time) for environmental training during 01/01/2012 – 30/06/2012.

TRAINING TYPE	TIME (HRS)
SPECIALISED TRAINING	20
GENERAL TRAINING	10



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