

EnvironNIS Leaflet (April 2011)

## EnvironNIS - Complex ecological examination of Naftna industrija Srbije (NIS) production facilities

### Objectives and scope

The project EnvironNIS was conducted by **Steinbeis Advanced Risk Technologies** ([www.risk-technologies.com](http://www.risk-technologies.com)) and **D'Appolonia S.p.A** ([www.dappolonia.it](http://www.dappolonia.it)), both members of EU-VRI ([www.eu-vri.eu](http://www.eu-vri.eu)), based on the Service Agreement with Petroleum Industry of Serbia, NIS ([www.nis.rs](http://www.nis.rs)), resulted from the open tender in July 2009.

#### Objectives of the project

- assessment of environmental status, risks and management system
- and development of corrective actions for the improvement of the environmental status and the reduction of the ongoing environmental risks and liabilities.

Assessment has included *twelve facilities* of NIS and their potential effects on the environment

- two oil refineries and one gas refinery
- two petrol stations
- two tank farms
- two service units
- two gas/oil dispatch stations
- one storage station for LPG.

- site investigations – groundwater, soil, hazardous waste storage area, air status, waste water
- evaluation of the actual environmental status for each facility.

#### Phase 2: Assessment of potential environmental risks

- impacts on subsoil and groundwater quality due possible accidental releases of chemical substances
- possible exceeding of the legislation limits
- possible obligations related to remediation and/or clean-up needs.

#### Phase 3: Assessment of facility environmental management system

- analysis of local and international legislative requirements
- evaluation of the environmental management system.

#### Phase 4: Development of instructions for improvement of environmental status and reduction of risks

*Start of the project:* July 2010

*End of the project:* January 2011

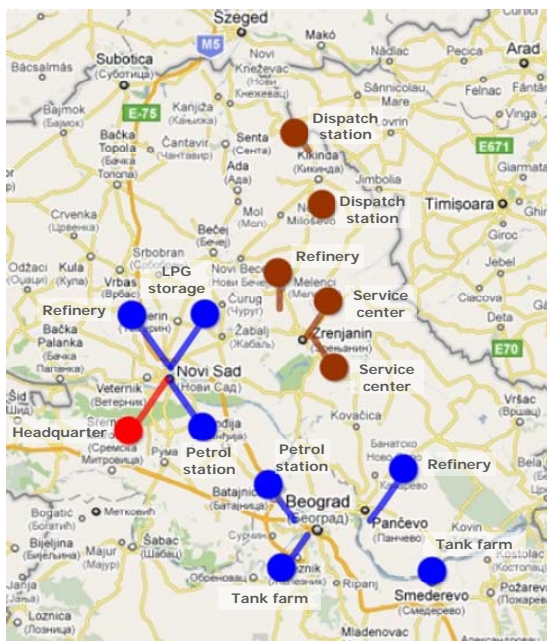


Figure 1: Facilities included in the assessment

### Project phases

#### Phase 1: Assessment of Environmental Status (water, soil, air)

- data acquisition
- site surveys carried out at each facilities
- data gap analysis and missing data identification

### Deliverables

Extremely demanding reporting procedure has resulted with

- **one intermediate report** for selected facilities with proposal of preliminary defined corrective or mitigation actions
- **24 final reports** one report for each of 12 facilities in English and Serbian language.

EnvironNIS project was running in a specific circumstances characterized by

- comprehensive set of input data for 12 facilities, 2000+ documents
- project teams, consisting of experts for different environmental issues, working on several different locations and on several languages
- complex coordination and planning of activities
- reporting on two languages.

The results of environmental assessment, although limited to a few locations per facility, have allowed to determine

- actual environmental status and hot spots for each of 12 facilities
  - subsoil and ground water
  - surface soil in the area of hazardous waste storage areas
  - waste water
  - air
- actual status of environmental, health and safety management system
- potential and actual environmental risks
- numerous corrective or mitigation actions to improve the environmental conditions and the environmental management of the facilities.

## Main results

The project has successfully answered to the great number of tasks posed by Technical assignment for the project.

Assessment of the environmental status has resulted with:

- **hydrogeological status** of each facility determined based on soil and ground water sampling and samples analysis
- **ecological landscape mapping** done with the purpose of detecting soil polluted by oil and petroleum products
- **pollution sources** reviewed and emitters exceeding reference values identified
- **level of soil pollution** in the area of hazardous materials storage areas identified with estimation of possible circulation of pollutants in the environment
- **status of the sewerage and the systems for waste water treatment** identified as well as status of plants for purification/cleaning
- **environmental management system** assessed, together with system for response to accidents with environmental consequences
- **impact of production** activities on each facility to the environment evaluated
- **morphology structural analysis** of the relief done, possible paths of pollutants migration and potential underground accumulation of hydrocarbon compounds estimated
- **zoning of polluted territories** done in accordance with predefined criteria.

Potential environmental risks has been assessed on the base of determined environmental status and additional data such as type of activities on the site, waste management system applied, existing safety emergency plans, policies and procedures for accident and pollution prevention... Special focus has been given to the existing risks related to:

- pollution of ground water and water-bearing horizons and potential pollution of surface flow streams with petroleum products
- waste water quality and possible pollution of recipients in case of reference value exceeding
- collection, storage and disposal of hazardous waste and risks related to the emission of pollutants in the environment
- final disposal of waste and remediation of polluted territories.

In the final phase of the project, **Instructions for improvement** of environmental status and reduction of environmental liabilities have been prepared consisting of:

- list of corrective actions to be implemented in the short/medium/long term period prioritized on the base of the regulatory requirements, characteristics of each facility and assessed risks
- review of national regulation, with an overview of existing state regulations
- recommendation regarding content and format of regular reports in order to ensure compliance with reporting requirements.

## Acceptance procedure and impact of the project

Results of the project were presented to the NIS a.d. representatives in the end of January 2011 but also to the ministries responsible for the environmental issues in Republic of Serbia. By the end of February 2011 report acceptance procedure was finished.

The results of the project were presented on the press conference that took place on March 17, 2011 at the Serbian government's press room, Nemanjina 11 in Belgrade.

In that occasion, the project received a praise as "**one of the best and the most comprehensive studies, performed in Serbia**".



Figure 2: Press conference on March 17, 2011 at the Serbian Government

NIS has already invested 90M € in environmental projects (60M € financed by Gazprom Neft) but, based on the results and proposals of the EnvironNIS project, 9.6M € will be additionally invested.

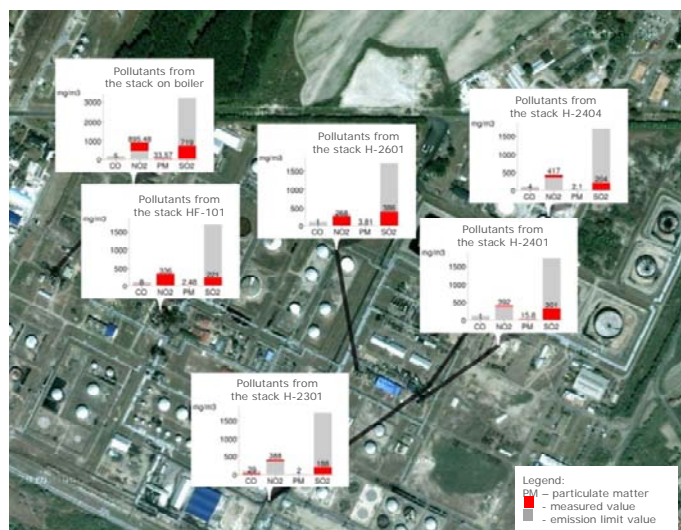


Figure 3: Emission in the air from the stacks in one refinery presented in the web based GIS supported system

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