

## **Work Package 4**

### **Elaboration of studies**

#### **Deliverable 4.6.1**

### **Elaboration of criteria for site selection (including a water/energy demands study)**

**Beneficiary 6 (PB6) - Municipality of Petrich**

**INTERREG V-A COOPERATION PROGRAMME:  
GREECE – BULGARIA 2014-2020**

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## Summary Report

The elaboration of criteria for site selection (including a water/energy demands study) was assigned to HIDRORESURS LTD Company in fulfillment of the contract "Performance of technical services in implementation of the project „Groundwater RESource managemENt for non-Potable water pURposes, baseMent protection, and heating - Pilot application". A penopt

The site selection of the new built water-ground facility, was made with the aim of ensuring long-term information on assessing the impact of different pressure sources and applying the tests for risk assessment and assessment of groundwater status, including assessment of saline or polluted water intrusion, assessment of trends and risk to surface water, aquatic and terrestrial ecosystems, and the aquifer facilities from which drinking water is drawn. In this regard, as well as in connection with the significant costs of its construction, the possibility of long-term stability for operation was evaluated when choosing its location.

Besides the groundwater facility can be used as a monitoring point to provide an information both on the natural characteristics of the groundwater in the area, and to assess the realized or potential impact of different types of pressure on the quantitative and chemical state of groundwater bodies within the boundaries of a municipality of Petrich. The site selection is tailored to assess the achievement of the five groundwater objectives:

- Non-admission or limitation of the release of pollutants;
- Preventing deterioration of the condition of underground water bodies;
- Achieving a good state of groundwater (chemical and quantitative);
- Implementation of measures to reverse any significant and sustained upward trend;
- Achieving the objectives for the water protection zones.

When elaboration of criteria for site selection, it was taken into account:

1. The geographical characteristics of the place
2. Geological structure of the area
3. Tectonics of the area
5. Hydrogeological characteristics of the area
6. Physico-geological phenomena and processes. Seismicity

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A conceptual model of the part of the water body was developed and a computational system was selected.

In this regard, the elaboration of criteria for site selection is based on the assessment of the risk of not achieving a good quantitative and/or chemical status of the groundwater and on the assessment of the quantitative and chemical status according to each of the criteria regulated in Water Framework Directive (WFD) and should support the implementation and improvement of assessments and the development and evaluation of programs of measures and the effective targeting of available financial resources to implement the most necessary measures to improve and maintain good groundwater status in the area of Petrich municipality.