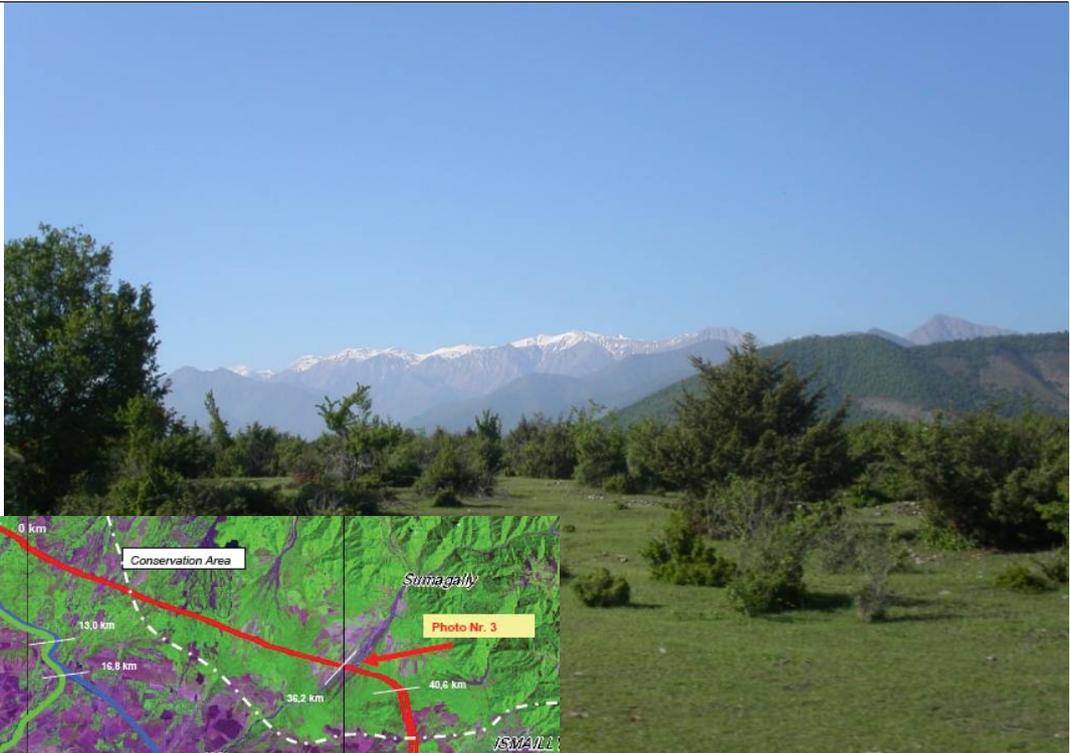




AZERBAIJAN

WATER SUPPLY PROJEKT OGUZ-GABALA-BAKU



Client	Azerzu Open Joint-Stock Company, Baku
Financing	Azerzu Open Joint-Stock Company, Baku
Duration of Services	2006
Cost of Implementation	425 Mio EUR (total project)
EIA (Consulting Fee)	85,000 EUR

Scope of Services

Pre-Feasibility Study

- Site visit
- Mapping of sensitive areas
- Classification of routing options

Feasibility Study

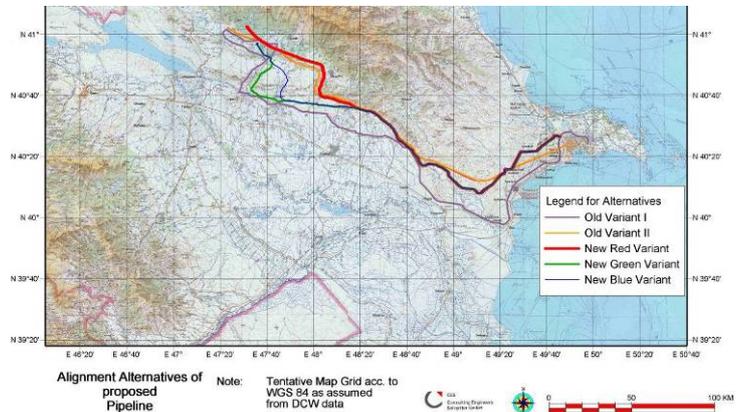
- Identification of impacts on all environmental media incl. socio-economic effects
- Assessment of impacts in a 5-step scale
- Elaboration of mitigation measures

Brief Project Description

The water supply of the capital of Azerbaijan has become unreliable in the recent years and population of Baku suffers from water shortages, particularly during the dry summer months. For the improvement of the water supply situation in Baku the exploration of the groundwater resources at the southern slopes of the Southern Caucasus and transmission via a pipeline to Baku has been investigated.

It is foreseen that the source development of the project would yield 5 m³/s of water. An elevation at the well field development area of 410 - 480 meters would enable gravity supply to Baku. The transmission system main installation is envisaged as a 2,000 mm diameter GRP pipeline with a length of about 280 km.

In the first phase the EIA was performed in order to identify the optimal routing of the pipeline with regard to least environmental impacts. Environmental Impacts due to wellfield development were difficult to assess due to lack of data. Therefore exploratory drillings were recommended and undertaken during Feasibility Stage.



During Feasibility Stage major negative impacts were identified for the water resources (groundwater level, base flow of rivers and brooks, springs) due to the GW abstraction in the well field. Therefore, geophysical investigations and preparation of a Groundwater model was strongly recommended for further planning as well as intensive monitoring during operation. Related to reduced GW level in the wellfield and reduced base flows in the rivers impacts on the biotopes in the project area can be expected. A monitoring system was recommended as well for valuable forest habitats in the entire Oguz-Gabala valley. Reduced available water resources would also affect farming activities which mainly depend on irrigation. For protection of GW resources wastewater collection and treatment in all

towns located in the valley was suggested as urgent measure. Mitigation measures during construction were listed and are to be specified in the EMPs to be prepared by the Contractors for detailed design and construction (FIDIC Yellow Book contracts).

Well field	Effects by Construction	Effects by Operation	Duration of the Impact	Mitigation possible	Remarks and explanations	Recommendation
- drop of groundwater level in the upper aquifer		●○	LT	N	Large area affected, drop of groundwater cannot be predicted due to limited information on aquifer interactions	Monitoring strongly recommended
Surface Water						
- input of pollutants	●	---	ST	Y	Improper handling of fuel and waste water	
- Springs		●●	LT	N	Dry out if the feeding groundwater level drops significantly	Monitoring
- Rivers and brooks		●●	LT	N	Reduced base flow in surface waters close to the well field	Monitoring
- Rivers and brooks		●○	LT	N	Reduced base flow in rivers which drain the Oguz-Gabala valley	Monitoring
Vegetation and Fauna						
- Habitat conditions		●●	LT	N	Destruction due to drop of groundwater level,	Monitoring strongly recommended
- vegetation	●●	●●	LT	Y	Removal of trees and shrubs for construction and installation of the wells, dividing the cohesive forest area by transmission main and access road	
- vegetation	●		ST	Y	Removal and destruction of grassland for construction	
- terrestrial fauna	●		ST	N	Disturbance of larger animals due to noise and activities, disappearance of smaller animals due to loss of habitats or due to direct extinction by construction activities	
- terrestrial fauna		●●	LT	N	If the habitat conditions of the forests and open shrub land change significantly due to drop of groundwater level	
- terrestrial fauna bound to water and wetlands		●	LT	N	Due to change of habitat conditions (reduced base flow in rivers and brooks, dry out of springs and puddles)	
- aquatic fauna		●	LT	N	Due to reduced base flow	