

# FINAL DESIGN DRAWINGS AND SUPERVISION OF WORKS FOR THE CONSTRUCTION OF DOUERA DAM IN THE AREA OF ALGER

**Country**  
ALGERIA

**Location**  
Douera

**Client**  
Ministry of Water  
Resources - ANBT

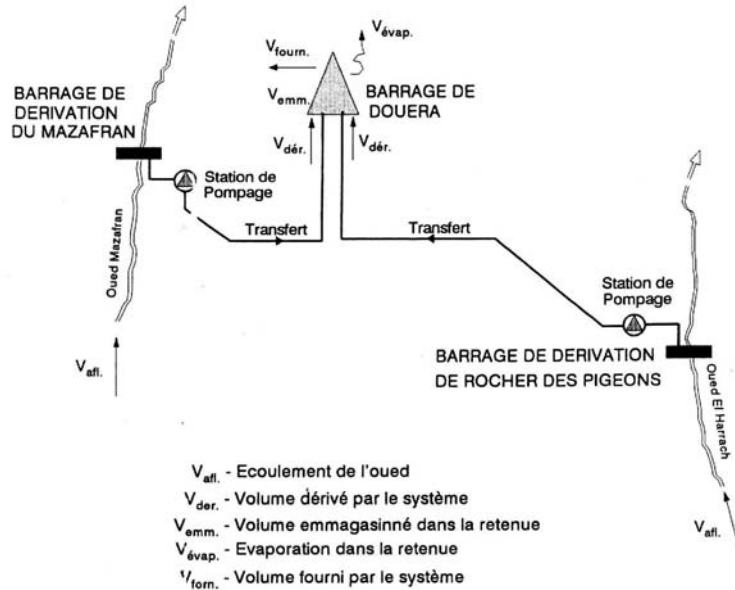
**Financing**  
Government of  
Algeria

**Project Cost**  
1,970,880 EUR

**Services of ENB**  
930,000 EUR

**Project Duration**  
03/2005 - 12/2008

**Associated Firms**  
INCO-MAG srl  
(Leader)



## Project Description

The site of the dam of Douera in the Oued Ben Amar, is located approximately 2 km south-west of Douera and approximately 17 km south-west of Alger. The catchment basin covers an approximate area of 10 km<sup>2</sup>. The capacity of the stream Ben Amar is negligible and the filling of the reservoir will be effected by the discharges of the streams Mazafran (39 Hm<sup>3</sup>) and El Harrad (71 Hm<sup>3</sup>).

The dam of Douera will cover the irrigation needs of the areas of Mitidja and Sahel.

The embankment consists of a watertight clay nucleus and of two shells of clay and sandy materials:

- Height of the embankment : 85 m
- Length of the crown : 820 m

The temporary diversion is consisted of a circular straight tunnel designed for a discharge capacity of 18.5 m<sup>3</sup>/s. This tunnel is conceived to ensure the following functions :

- Temporary diversion ;
- Bottom evacuation ;
- Terminal works of the transfer system for the alimentation of the reservoirs.

The technical characteristics of the diversion tunnel are :

- o Length : 383 m
- o Diameter : 3.5 m
- o Maximum Discharge: 18.5 m<sup>3</sup>/s.

The water intake tower is submerged and connected to the diversion tunnel. The maximum transferable discharge capacity is 14 m<sup>3</sup>/s with velocity of 7 m/s.

The embankment has been designed to control the overflows in case of a non-stop operation of the pumps, a dozen days following the filling of the reservoir.

- Height of the embankment : 12 m ;
- Length of the crown : 15 m ;
- Maximum discharge: 120 m<sup>3</sup>/s.

The volume of the works is the following :

- Excavations : 698,000 m<sup>3</sup> ;
- Backfillings : 6,220,000 m<sup>3</sup> ;
- Concrete for structures : 21,500 m<sup>3</sup> ;
- Boreholes and injections : 5,000 ml.

## Services

- Construction drawings
- Supplementary designs
- Supervision of works
- Final Inspection and taking over