

TIOULI WEST (Zn-Pb) (PAYS DES HORSTS, MOROCCO)

Overview :

The Tiouli west prospect is located in the north-eastern part of Morocco, which is a potential area for MVT mineralization. The mineralization is represented by Galena and Calamine hosted in Aaleno – Bajocian dolomitic limestones. It shows significant grades of zinc. The area is located near the lead –zinc district of Touissit – Boubeker and has easy access by road, rail and electrical networks.

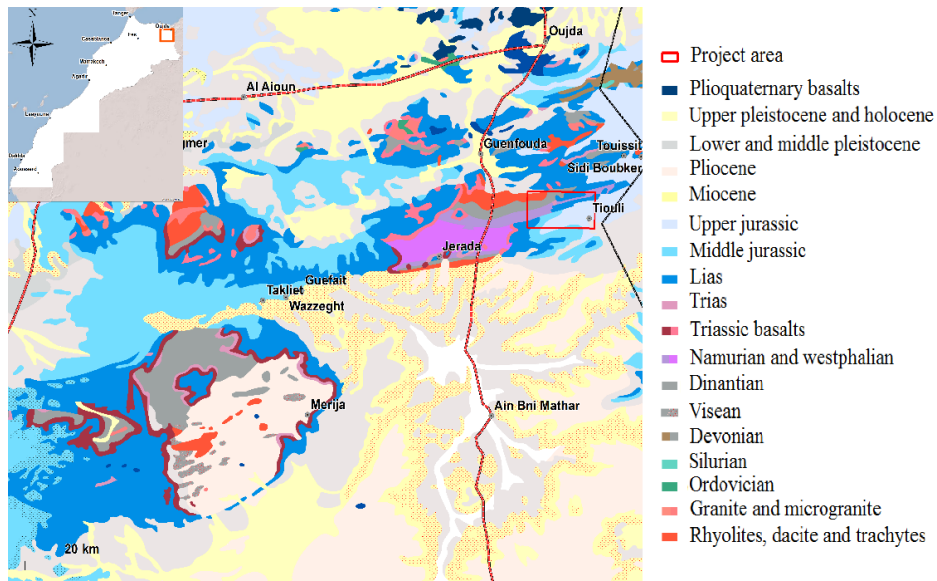
Target name	Tiouli west
Type of mineralization	MVT
License coverage	6 research permits (covering 96 Km ²)
Available data	Geological data/ Rock samples/ Geophysics/ Geochemical data/ boreholes data
Grades	3 % Zn, 0,5 % Pb
Dimensions	Length : 4.5 km / Rooting : 150 m / Average thickness : 7 m
Resources	1 300 000 t @ 1.6% Zn
Infrastructures	Road and high way, train rails and electrical network.

Geological settings and location:

The Tiouli west prospect is located in the "Pays des Horsts" area at 30 Km south of Oujda city. It is covered by six exploration licences, and is accessible by the provincial road joining Tiouli to Touissit. The Tiouli prospect is a mixed type deposit, with stratabound and fault zone hosted mineralization, hosted in dolomitic and tabular series of the Aaleno-bajocian, which is buried under the Dogger and Callovian marly sandstone. This transgressive formation covers the middle liasic limestones and in some places the triassic volcano- sedimentary formations, which are in unconformity with the folded westphalian bedrock.

Mineralization :

Mineralization in the area consists of calamine and galena hosted in fault breccia in a system of parallel structures oriented N50 ° to N80 ° with a dip of 70 ° to 80 ° towards the SSE. The most important structure extends over a length of more than 4 km inside ONHYM's mining permits. The thickness of this structure varies between 1 and 10 m. Evidences of a stratabound mineralization were observed in the south.



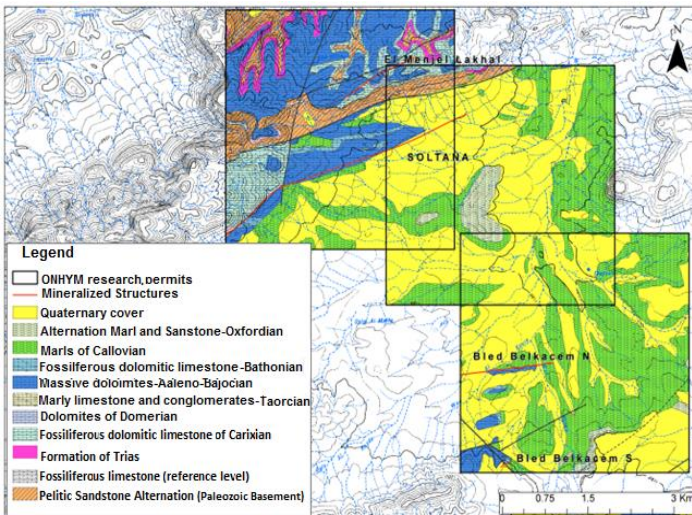
Location and geology of Tiouli Area



Calamine and Galena observed in the area

The geological work highlighted three other mineralized structures that exceeded one-kilometer extension within the ONHYM mining domain.

Achieved Works and results:

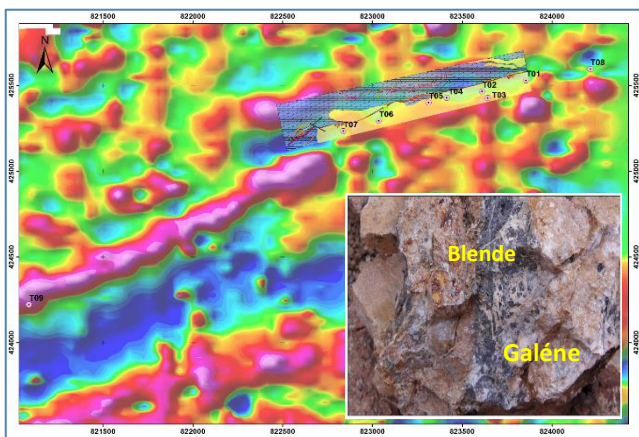


Mineralized structures of the Tiouli west prospect

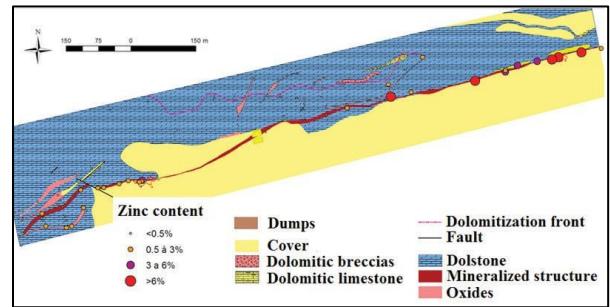
In 2015, and in order to find a new lead-zinc targets hidden in the eastern region of Morocco, ONHYM conducted an integrated mining exploration project in the area. The work of this project has been made in two phases:

PHASE I "Synthesis, Analysis and interpretation of available data": after the targeting work several targets have been selected, including the Tiouli West area.

PHASE II "Implementation of the action plan developed during the first phase": As a result of this phase, Tiouli target was selected for further detailed geological works, geophysics (magnetism and spontaneous polarization), soil geochemistry and core drilling.



Surface samples taken at Tiouli's main structure shows zinc grades varying between 0.02 % and 13.7 %, with an average of 3 % Zn and lead grades between 0.01 % and 3 % with an average of 0.5 % Pb.

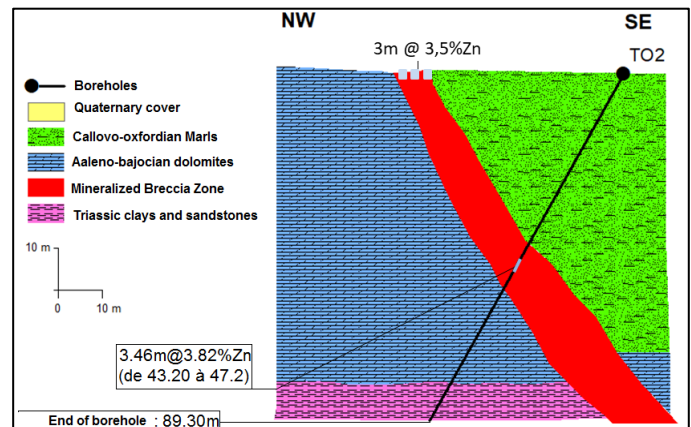


Details map and sampling of Tiouli west target

The results of geophysical work highlighted a magnetic structure, with 4 km length, which follows the main mineralized structure. The electrical profiles, reached depths between 110 to 175 m, and show that this structure has a rooting of 150 m.

The geological work shown three mineralized structures: the structure of El Manjal Lakhel in the North and the two structures of Bled Belkacem North and South both located in the southern sector.

Following these results, 53 drill holes totaling 4000 m were carried out between 2018 and 2019. These holes intercepted the mineralized structure of Soltana over a thickness varying between 1.13 and 4.4 m with Zinc grades between 0.5% and 6.7% with an average grade of 2.4% Zn. The Bled Belkacem South structure was intercepted over 3 m with an average grade of 2.6% Zn. The other structures shows index grades.



Outlook :

These results made it possible to estimate the preliminary resources of the Soltana structure at 1300000 tonnes at 1.6 % Zn with extensions to the East.

For further research in the Tiouli West prospect, exploration will continue to cover the main structure extensions, other drill holes (2500 m) are being carried out at the level of the study area.

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