

**BEYPAZARI (TURKEY) TRONA BASIN – GEOLOGY, MINING and  
PRODUCTION TECHNIQUES with the  
FORTHCOMING EFFECTS on the  
WORLDWIDE SODA ASH MARKET**

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**Abstract**

Trona ( $\text{Na}_2\text{CO}_3 \cdot \text{NaHCO}_3 \cdot 2\text{H}_2\text{O}$ ) is the perfect industrial mineral to produce the fundamental inorganic chemical sodium carbonate ( $\text{Na}_2\text{CO}_3$ ), commercially known as soda ash. Soda ash can be produced naturally by trona or synthetically by salt, ammonia and limestone.

Bey pazari Basin is one of the most important Neogene Basins in Turkey with the 237 Million metric tons (Mt.) trona treasure it holds. The location of trona deposit is more or less in the middle of Turkey, exactly 15 km. (9 miles) northwest of the small town called Bey pazari. Chiefly 12 trona beds, which are interbedded with oil shale, clay stone and tuff, take place under the 250 m. to 400 m. (820 feet to 1,312 feet) depth. With the 237 Mt. trona deposition; it is feasible to declare that Bey pazari Trona Basin contains the world's second biggest trona source after the deposits in Green River Basin, Wyoming, U.S.A..

Trona could be taken out by dry mining such as longwall, shortwall, continuous mining techniques or wet mining technique which is also called as solution mining. The usage of solution mining in trona ores has been started by FMC Wyoming Corporation in the early 1980's. Although most of the trona mining companies choose dry mining methods to take out the trona, Eti Soda A.S. (Abbreviation of Anonim Sirket in Turkish, joint stuck company in English), which is the holder of the rights to mine Bey pazari Trona Deposit and to produce soda ash in Bey pazari, is going to extract the trona deposit by using solution mining technique and manufacture soda ash according to the most agreeable method, named; monohydrate.

Global soda ash production in 2006 was 43 Mt. which means rise by 2% with respect to the previous year. China, Solvay S.A. (Abbreviation of Societe Anonyme in French, corporation in English) and the U.S.A. are the biggest members of the global soda ash market. Eti Soda Corporation is projecting to manufacture annual 1 Mt. soda ash with 0,1 Mt. baking soda ( $\text{NaHCO}_3$ ) by 2008 for the coming 30 years. The main sales plan is to export the soda ash primarily to Europe and secondarily to the other neighbor countries on the east. Firstly, Solvay Corporation as a European producer seems like it will be the expected competitor of Eti Soda Company. Secondly U.S. Producers, as the major exporters to the East Europe and Middle East, and Soda Sanayii as the sole domestic soda ash producer are the other possible future competitors.

This study summarizes the trona basin in Bey pazari (Turkey) and gives the basic knowledge of geology, mining and production techniques and discusses about its forthcoming effects on the worldwide soda ash market.

Key Words: China, Geology, Sodium Minerals except Salt (trona, nahcolite), Soda Ash, Trona, Turkey, Wyoming.