

20.16 **Variability of Jordanian Oil Shale and Processing Technologies**

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Jordan has huge oil shale reserves spread over the country, with about 50 billion tons located in the central part. Oil shale is considered the only discovered fossil fuel in Jordan yet. The dependency of Jordan on imported crude oil and gas put extra pressure on the Jordanian economy as a result of the heavy and yet growing energy bill. The Jordanian government shows interest in commercializing its potential oil shale reserves and signed many agreements and memoranda of understanding with many external companies' expert in oil shale processing, such as Shell international and the Estonian company Eesti. In this work, the variability of Jordanian oil shale will be investigated. Also, review of processing technologies will be presented. Relation between oil shale characteristics and processing method will be discussed focusing on more environmentally friendly techniques such as accelerated solvent extraction and supercritical fluid extraction. Jordanian oil shale is characterized by its good quality, and near surface deposits (stripping ratio 1 to 1.6). Also the main deposits are located in central Jordan with good road network and effectively thin population. On general, the average oil content varies between 5.7 to 10.5 wt % and the total organic matter ranges from 18 – 23.3 wt%. On the other hand, the CaCO₃ and SO₃ varied in the range 47 – 69 wt%, and 4.2 – 4.9 wt% respectively. Also, it is characterized by low moisture content (1.71 – 3.8 wt%).