

16.4 Evolution of Petrochina Company Limited Studies of Oil Shale in DaQing

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With crude oil prices reaching record highs, oil shale has become an important potential source to be developed as a substitute for conventional oil. Geologic reconnaissance indicates that China has abundant oil shale resources. The oil resources in oil shale consists of proved reserves of more than 47.6 billion tons and recoverable reserves of more than 12 billion tons, according to the new national evaluation results in 2006.

Petrochina Company Limited has been engaged in oil shale Resource Exploitation since 2005. This paper introduces the oil shale resources in LiuShuHe Basin, and discusses some retorting processes suitable to the oil shale. This is the first Petrochina Company development project, and it will play an important role in the development of China's oil shale.

The evaluation shows that the proved reserves of oil shale in LiuShuhe basin are 2.56 million tons. The oil yield of Liushuhe oil shale is about 7% to 19%. However, the water content is very high, ranging from about 4% to 25%. The heat stability of the shale is not very good; during heating, the oil shale shows the behavior of bursting fracturing, and the resulting grain size could be very small. The FuShun retorting process is suitable for grain sizes from 8mm to 75mm. So the Liushuhe oil shale can not be treated by FuShun process.

Petrochina Company Limited has developed a process to treat Liushuhe oil shale and planed to build a model plant with 30 thousand tons of oil shale per year capacity in LiuShuHe Basin.