

Integrated Lab Studies For Uranium Exploration In High Radioactive Formations

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With the shrinking sources of the fossil fuels, the lookout for alternate energy sources has attained new dimension. Nuclear energy is one such source which can, to an extent ease the pressure on fossil fuels. Nuclear reactors need Uranium for fission reactions to generate energy.

The Krishna- Godavari basin has many wells drilled having high gamma ray values. The Raghavpuram shales have two distinct units - - the high GR high resistivity and low GR low resistivity units. Of these the high GR unit of Raghavpuram shales looks more interesting for uranium exploration. However in the absence of NGS log in most of the wells, studies on the core samples of these wells in laboratory are the only option.

The samples from cores of K-G basin have been studied for Uranium content. NGS data has been acquired in the lab on claystone/sandstone/shale samples of conventional cores of Raghavpuram Shales, sedimentological studies have also been carried on representative core samples Analysis of the acquired data in Raghavpuram shales give the distribution of Thorium, Potassium and Uranium concentration. Transforms have been generated between log gamma ray and core measured uranium in Raghavpuram shales. These transforms can then be used to estimate uranium concentration from log gamma ray in the respective field.

This paper explores the possibility of application of integrated studies for estimation of uranium concentration. The uranium concentration so estimated can then help in defining the exploration strategy for Uranium mining. One such method is In Situ Leaching (ISL). ISL is a cost effective method but its success depends on the concentration of Uranium. Thus integrated lab studies can help in deciding whether to employ ISL or not.