

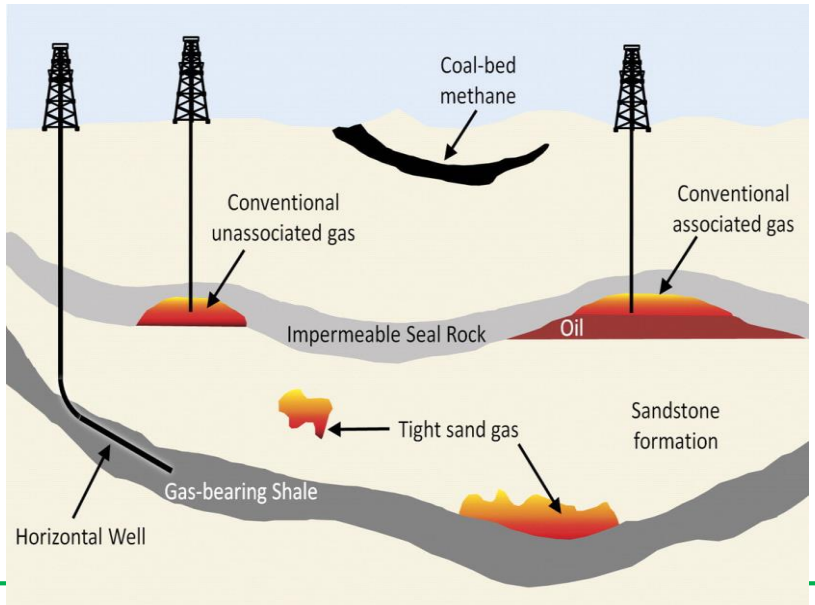
# Shale Gas World+ India

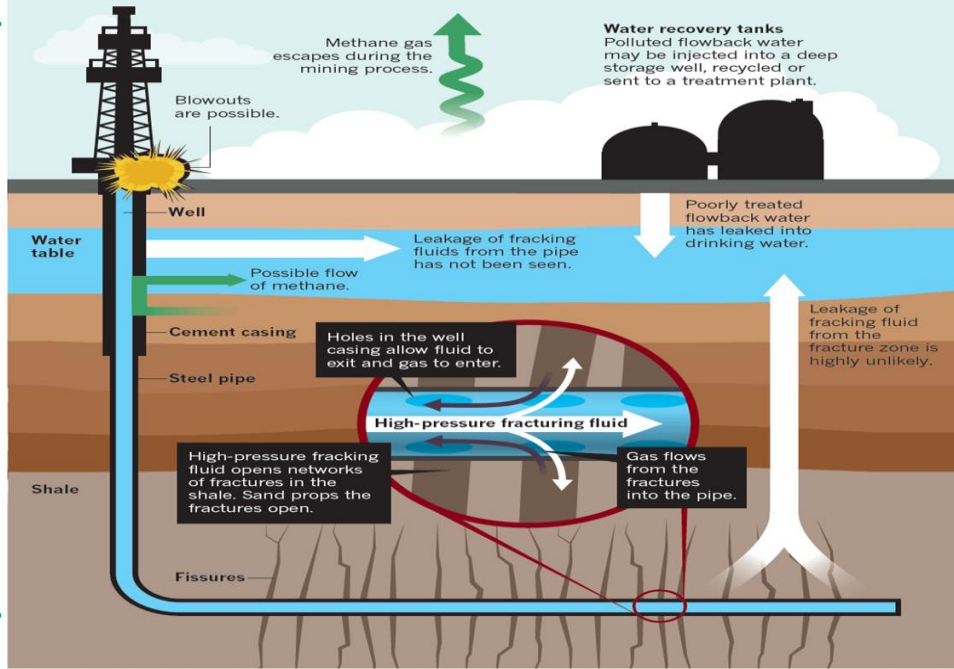
By Sudarshan Gurjar

# Shale Gas

- Shale gas is a mixture of lot of **methane** , ethane, propane, & butane ,carbon dioxide, nitrogen, and **hydrogen sulphide**.
- Shales are **fine-grained sedimentary rocks** formed of organic-rich mud at the bottom of ancient seas.
- The resultant heat and pressure transformed the mud into shale and also produced natural gas from the organic matter contained in it.
- Over long spans of geologic time, some of the gas migrated to adjacent **sandstones** and was trapped in them, forming conventional gas accumulations. The rest of the gas remained **locked** in the **nonporous shale**

Extraction is done through **horizontal drilling** through the shale seam, followed by **hydraulic fracturing** of the rock by the **injecting fluid at extremely high pressure**.







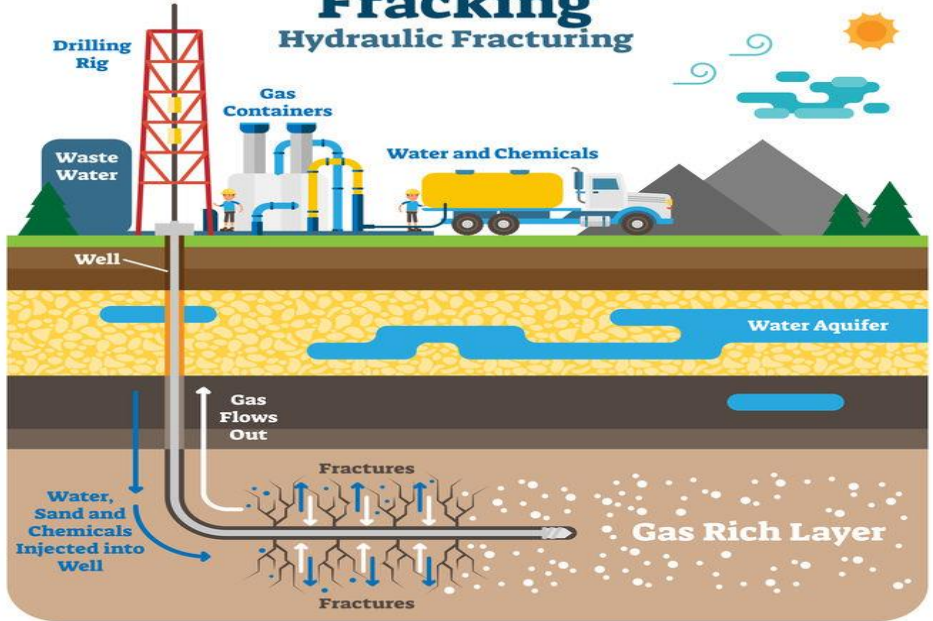
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- **Guar gum**

- Guar gum can quickly turn water into a **very thick gel**.
- Adding guar gum **increases viscosity of water** and **makes high-pressure pumping and the fracturing process more efficient**.
- The guar bean is grown mainly by farmers in **Rajasthan** and **Haryana**.

# Fracking

## Hydraulic Fracturing





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- **Problems associated with shale gas exploitation**

- Environmentalists have objected to fracking because of the **damage to forest cover and possible contamination of ground water.**
- However, industry officials say that the treated water can be **re-used** for further fracking and need not be disposed of at all.

Country	Shale gas reserves (in TCF)	Technically recoverable Shale gas reserves (in TCF)
<b>1. China</b>	<b>1275</b>	1,115
<b>2. USA</b>	<b>862</b>	623
3. Argentina	774	802
4. Mexico	681	545
5. South Africa	485	390
<b>India</b>	<b><u>100-200 TCF</u></b>	World Total 7576