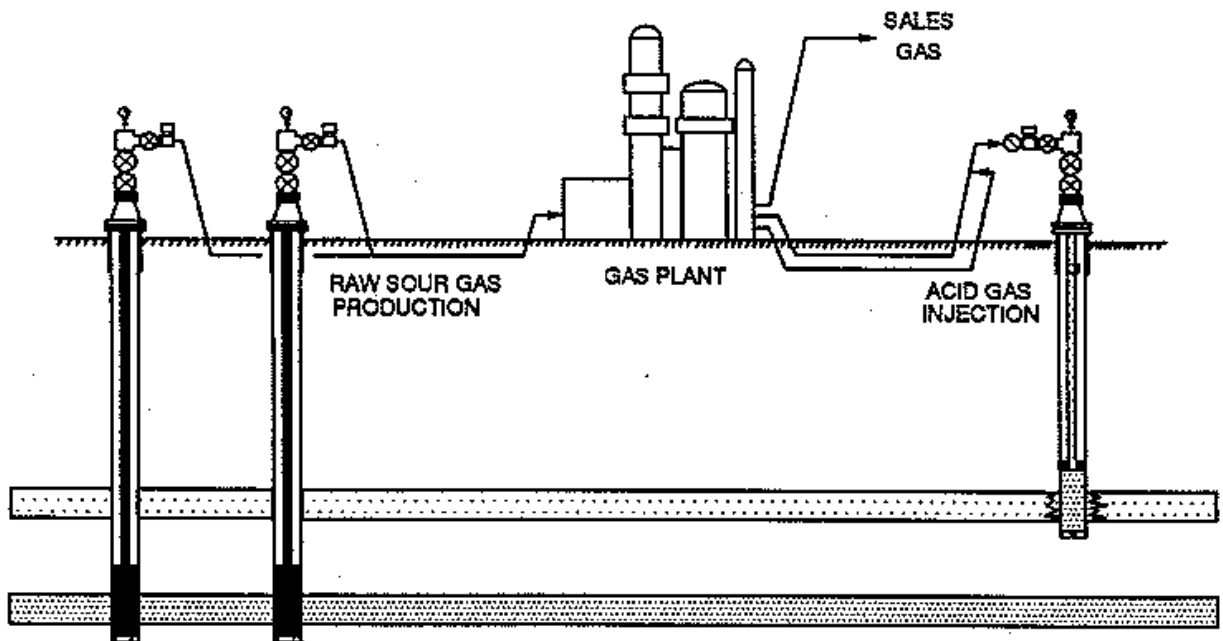


SULPHUR DISPOSAL BY ACID GAS INJECTION

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INTRODUCTION

Sour natural gas contains hydrogen sulphide (H_2S), which has to be removed to meet specifications for sales gas. Sour natural gas also contains carbon dioxide (CO_2). The removal of CO_2 and H_2S , usually called acid gases, from sour natural gas is generally accomplished by means of a regenerative solvent. There are several amine solvents used for this purpose. Upon regeneration of the solvent, the acid gases are liberated, and are usually sent to a modified Claus plant, where the H_2S is converted to elemental sulphur. The acid gas stream to the modified Claus plant consists of H_2S , CO_2 , water vapour and minor amounts of hydrocarbon gas. When the concentration of CO_2 is considerably greater than the concentration of H_2S in the acid gas mixture, the Claus plant has difficulty in achieving a high sulphur recovery. If the total sulphur rate is small, say less than 5 tonne/day, it may be more economical to recover the sulphur by some other process. Such other processes, however, have many drawbacks of their own.

An alternative to recovering sulphur is to compress and reinject the acid gases into a suitable underground zone, in a manner similar to the disposal of produced water. An additional benefit of reinjecting the acid gases is the elimination of emission of sulphur compounds as well as CO_2 to the atmosphere.

This paper discusses the technical considerations for acid gas compression and injection into an underground zone.