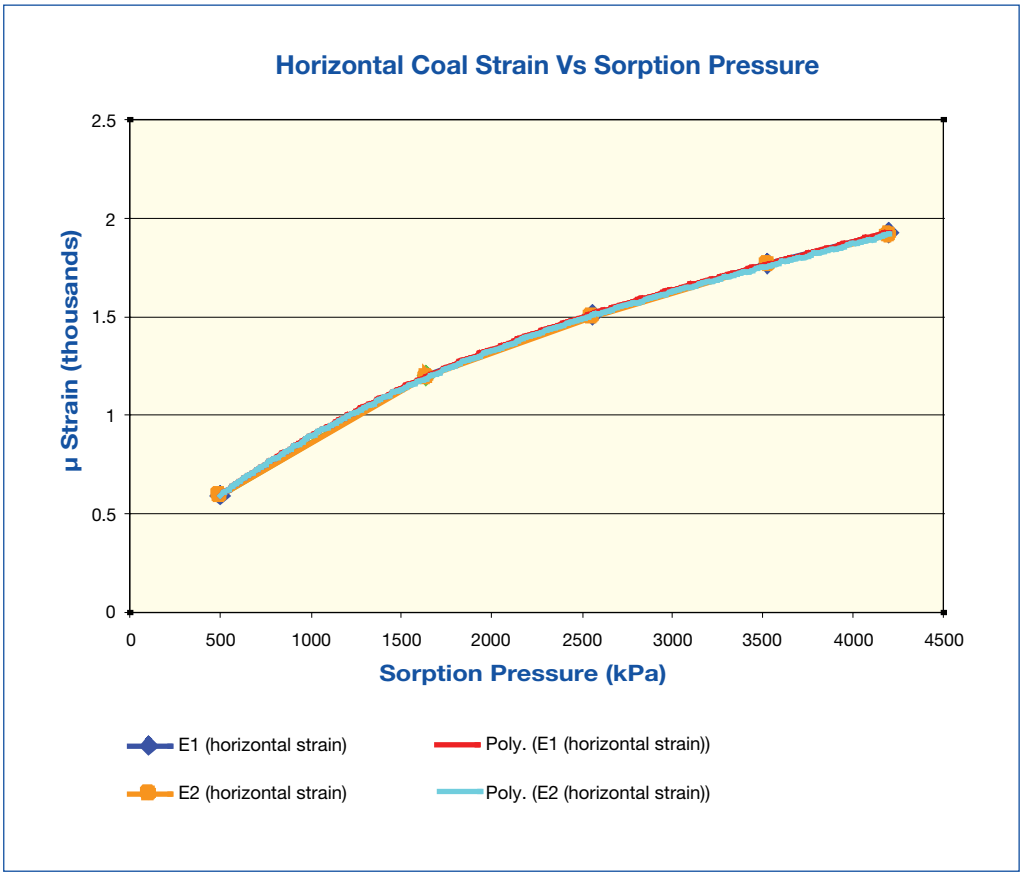
COAL SHRINKAGE BEHAVIOUR

Coal seams exhibit properties which are not found in other rocks. In particular, the permeability is often extremely sensitive to changes in effective stress. In some coal seams reduction of an order of magnitude in permeability may occur due to fluid pressure lowering during production. Countering this effect is the unusual property of coal that causes it to shrink as it desorbs gas and dries out.

It is of prime importance to know whether the reservoir permeability will increase or decrease with production.

In order to determine this, Sigra undertakes tests on coal to measure both the stress deformation character and the change in coal dimension with desorption. Using this information, Sigra can predict, using stress path analysis, what will happen to the effective stress in the coal with production, and thus the nature of absolute permeability variation that may be expected throughout production.



Shrinkage strain vs gas pressure plot for Central Queensland coal

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