Characterizing the source zones for surface casing vent leaks

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Abstract

As the geochemical testing methods used to fingerprint gases and liquids continues to progress into diverse new areas, the insight they provide in solving critical oil-field challenges continues to expand. Compositional and stable isotope ratios provide distinct geochemical 'fingerprints' that can be used to characterize local and regional gas/fluid migration pathways. Combining these geochemical characterizations with appropriate sample collection and sample integrity provides the basis needed to identify the geological source zones that cause surface casing vent flows (gas/fluids) and gas migration issues related to production well abandonment. These techniques dramatically decrease the costs associated with some of the major issues currently emerging in the oil patch. This talk will walk through examples of the investigative approaches from sample collection through to data interpretation.

This presentation will cover case studies and describe the geoforensic techniques used in:

1. *identifying gases emanating of surface casing vents;*
2. *identifying liquids coming from surface casing vents and how it could be a potential sign of bigger problems;*

This presentation will demonstrate that geoforensics is a valuable technique for a company's toolbox to aid in successful repair of operating wells and to more successful abandonments.

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