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Comments: On Land Development

Blowouts

Drilling on land is unlikely to lead to pollution on the scale of Macondo.

Blowouts can occur and may lead to fatalities amongst the drill crew, but it is likely that a blowout can be "capped" within a few days and therefore pollution limited.

The Pryor well incident (Oklahoma, USA, January 22nd 2018 - 5 fatalities) should be considered a realistic onshore incident. The well was "capped" within a couple of days.

New analysis (UH) - Potential for a Blowout - New Analysis

New analysis with UH (University of Houston) has looked further at what happened at Macondo and (to an extent) the Pryor well. Specifically, the focus has been on events in the last couple of minutes prior to the dramatic egress of oil and gas from a well at the start of a blowout (this is where if a spark is present there could be an explosion and obviously catastrophic consequences).

Although the industry has recognized this type of event it is fair to say that the industry has not to date had sufficiently realistic and robust analysis tools to properly articulate how severe and rapid this event is likely to be. If such an event is about to happen it is quite likely that even the quickest acting drill crew will not be quick enough (this was the case for the Pryor well).

This work at UH has produced an analysis tool that apparently describes this type of event realistically. Similar events to this do occur in the natural world - video of the Stromboli volcano (Italy) is an example. The (recent) analysis carried out by volcanologists is similar in nature to the work at UH.

An analogue is that if you are driving on the motorway and another driver "clips" you, you will not have any time to react (unless you are Lewis Hamilton) and you may find yourself in a spin and you will certainly not be in control.

The bottom line is that a drilling crew will not have enough time to react if a situation has progressed to a certain point - this is possibly not well recognized within the industry at present.

Successful Development (!) - No incident

Developments (accumulations) of oil and gas can be large or small. For a large (conventional) accumulation it is possible to conduct ERD, locate many wells in one location and therefore minimize the disruption/damage to the overall area - there are examples of this type of development (for example, Wytch Farm, UK).

This would not be the case for a small (distributed) accumulation such as would be found in a shale formation.

There is not enough money (income) to justify ERD and in any case, the reservoir is spread over a large area.

Although well pads can be used, it is likely that only four or six wells can be drilled from each pad.

As a result, the oil formation is produced to a series of (distributed) pads. Any associated gas (methane) must be dealt with. It is flared off unless (multiple) flowlines are run to these pads.

Developing a "distributed" oil/gas accumulation, such as those within shale formations is typically disastrous for the affected topography/environment. It is likely to be allowed by a local community because 20-25% oil/gas revenue royalties are paid to the mineral rights owner (the landowner) AND the value of land in many shale areas to date is low AND potential cash/income generation from this land is very small. The land within the National Forests is very different to that described in the last couple of sentences.

It should/must be made clear by the authority that in any planning process only a large discovered accumulation which enables ERD and other approaches will be considered for future development. This would preclude shale development, but perhaps that should be the case, given the nature (and the value to people) of these Texas National Forests.

This note does not address:

- (1)Any impact of drilling production on the water supply for major cities such as Houston
- (2)Climate change aspects of any such development!