

15<sup>th</sup> August, 2017

Dear Mrs. May,

**RE: High Volume Hydraulic Fracturing – Inadequate Regulation & Monitoring**

I would be grateful if you would personally consider my points below and not just pass on to a “relevant” dept. as this is a very serious and substantial topic of interest for your government. I am a professional who has been involved in the Oil and Gas sector for over two decades. I have consulted with senior civil servants and ministers, written numerous peer reviewed papers and given many public meetings on fracking.<sup>(1)</sup> I will use two examples to illustrate my case but I have many more of equal importance and effect.

Example 1: Government. The Royal Society/ Royal Academy of Engineering (RS/RAE) published a Shale Gas Report in June 2012. I was one of the 71 contributors to this report drawn from around the globe. I am cited in it. I agreed with its ten recommendations, all of which the government has accepted. I wrote a follow up paper on this in 2013 and concluded that **only 1 of the 10 recommendations has actually been implemented in full.** I presented my paper to the RS/RAE<sup>(2)</sup> and the Chair’s (Lord Mair) representative (Prof. Younger) who was also one of the 8 report authors, accepted my conclusion. This is still the situation now, yet fracking is about to recommence with the first ever onshore lateral sections in the U.K. starting at Preston New Road Pad on the Fylde in Lancashire. **This is unsafe and will put the public at great risk.** There are two large secondary and numerous primary schools within 2 miles downwind. It will also ensure local indigenous industries, particularly farming and tourism, will suffer great and permanent damage.

Example 2: Regulation. I have been “consulting” with the Environment Agency (EA) since 2011. They have virtually no experience at all of regulating unconventional fossil fuels. This has been made very clear to me many times as they flounder and was indeed one of the ten recommendations of the RS/RAE report. The permits (by which the EA raises revenue and so is not financially independent from the operator) issued to my local license holder (PEDL 165 – Cuadrilla) by the EA state there is no Best Available Technique (BAT) for the 68m litres of toxic (as identified by the EA)<sup>(3)</sup> fracking waste left in the ground from the 4 wells about to be drilled in Lancashire. **It is the law (EPR 2010 Regs)<sup>(4)</sup> that not one single litre is allowed to escape the target formation.** The EA decided to rely on assurances given by Cuadrilla to facilitate issuing the permits in 2015. Now the EA have published a document stating that they (the EA) must be able to confirm that no fracking waste has left the shales.<sup>(5)</sup> **This directly contradicts their own permit** and in any case in 2015 the Technical Director of Cuadrilla (Dr. A. Quarles) stated publicly that “we have no idea where the final resting place (of the fracking waste) is”.<sup>(6)</sup> Fracking waste can migrate to the aquifer via vertical and horizontal migration and so will contaminate it. The Fylde takes 55% of its drinking water from the same aquifer.<sup>(7)</sup> The EA have just demonstrated how far behind they are and so how incredibly dangerous any fracking would now be. They are not fit for purpose to regulate this new industry onshore. Likewise the regulations are also totally inadequate, have not been developed or simply cannot be met and so are being ignored.

I can cite many equivalent examples where regulations themselves, regulatory oversight and monitoring is falling way below those required for this industry and way below that which you have stated is necessary. Your advisors appear not to understand the reality of the situation on the ground. The responses I have had from ministers and civil servants are astonishingly similar to those received by professionals and concerned members of the public prior to the Grenfell disaster.

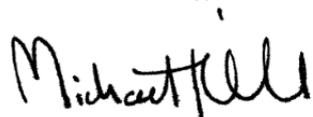
**I can assure you Prime Minister, awful though the Grenfell disaster was, the outcome of your actions on fracking, the lack of effective regulation and monitoring actually in place (not just in box ticked documents), will lead to a far greater disaster and cost the country far more in terms of lives lost and businesses destroyed.**

The amount of gas that can be recovered by fracking is small. Approx. 3%-5% of U.K.'s total needs of approx. 3tcf/annum. It is very different from conventional in terms of gas produced and risks to the environment. Onshore the risks also affect the general public and local business. The national interest is not served by damaging local industries and destroying our farming sector. Just the rumour of fracking waste contamination will be enough. Please recall the BSE crisis. This will dwarf it. My colleagues on the Technical Working Group at the EU Commission have informed me that the EU would be minded to impose exclusion zones for 30km around each fracking well for ALL produce. Brexit only complicates that further and will strengthen their resolve to protect their publics and also their markets with a very justifiable excuse. The U.S.A. has been able to frack and produce a lot of gas without such damage mainly because it is a vast country with a relatively tiny population when compared the U.K. Also it is important to note, contrary to popular belief (mainly amongst non-professionals in the field) the regulations in the U.S. relating to fracking are considerably more robust than the U.K. (I can happily provide specific examples). They also have a balanced approach to inspections. By this I refer to a balance between goal setting/self-regulation and prescription (min standards). **We do not and I can prove this with actual examples fracking company CEOs have given me.**

Please may I ask that you do not make a similar mistake as was made over the Grenfell disaster. I can provide evidence for all my assertions and I can provide many more examples. The public are being put at great risk by the your approach. **The risks can and should be mitigated but they are not.** Please do not just accept your special advisors, civil servants and ministers views. Many will not have my qualifications, experience and knowledge. Please consider halting the industry at this time and conducting a thorough review. The exploratory phase alone has the power to severely damage local populations and business. Just the first four wells on the Fylde will leave millions of litres of toxic waste in the ground and very likely will also emit large quantities of unburnt gasses such as Radon, Benzene, Toluene and Xylene over the local schools via the flare. (Flaring is now effectively banned in the U.S.A. via the use of "green tanking" or reduced emission completions as I and Prof. David Mackay recommended to the DECC 5 years ago).

Based on the current situation, as a professional engineer and expert in the field, I know this will go wrong. In the shadow of the Grenfell disaster I need to have a clear conscience that I did all I could to raise the alarm prior to that happening. There is still time but it is getting very short. I would be very happy to meet with yourself and your ministers to discuss further.

Yours sincerely,



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Notes:

- (1). See [www.shalegasoffice.com](http://www.shalegasoffice.com)
- (2) *Brief Review of RS/RAE Report and present position of Shale Gas Regulation*, Hill MP, Slater G, Nov 2013.
- (3). See EA published analysis North West Monitoring of Flowback - Doc 6<sup>th</sup> Dec, 2011 : [http://webarchive.nationalarchives.gov.uk/20140328145127/http://www.environment-agency.gov.uk/static/documents/Business/6th Dec - Shale gas - North West - Monitoring of flowback water - update \(3\).pdf](http://webarchive.nationalarchives.gov.uk/20140328145127/http://www.environment-agency.gov.uk/static/documents/Business/6th_Dec_-_Shale_gas_-_North_West_-_Monitoring_of_flowback_water_-_update_(3).pdf). Flowback was approx. 50%. Cuadrilla have stated this week in their fracking plan they will use 765,000 litres of fracking fluid per frack stage and 45 stages per borehole and 4 initial boreholes on the Fylde. Later spreading to 6,000 boreholes on the Fylde and up to 100 frack stages per borehole.
- (4). I identified this myself through Tim Webb (then at The Times) and verified with Lord Smith (then Chair of the EA).
- (5). See EA doc: Background Cuadrilla PNR Hydraulic Fracturing Plan: [https://consult.environment-agency.gov.uk/onshore-oil-and-gas/information-on-cuadrillas-preston-new-road-site/supporting\\_documents/Cuadrilla%20HFP%20Background.pdf](https://consult.environment-agency.gov.uk/onshore-oil-and-gas/information-on-cuadrillas-preston-new-road-site/supporting_documents/Cuadrilla%20HFP%20Background.pdf)
- (6). See The Case: [https://docs.wixstatic.com/ugd/b0aabf\\_8b49380dd66c44e7b614dc0f3241a5ac.pdf](https://docs.wixstatic.com/ugd/b0aabf_8b49380dd66c44e7b614dc0f3241a5ac.pdf)
- (7). Letter to M Hill from United Utilities dated 14<sup>th</sup> July 2017.