



## Face-to-Face with Fracking

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### Foreword

*Ever since I joined the political fray in Thirsk & Malton in July 2014, shale gas exploration, or fracking, has been the hottest local topic. A year later I had heard enough hype and scare stories, so decided to go and see for myself. Pennsylvania was my destination of choice, principally due to the kind correspondences of constituents who connected me with local people in the area who have experienced fracking since 2008.*

*I travelled with my wife, Nikky, and Bob Gardiner, a friend and Ryedale District Councillor who has worked in health and safety in the offshore diving industry for many years. BBC Look North's Danni Hewson and her cameraman, Lee, decided to shadow our research trip. We funded our own trip so there was no element or could be no accusations of fear or favour in where I went or what questions we could ask. The presence of my wife on the trip meant that we also looked at this from the standpoint of parents and residents of a village where a Petroleum Exploration and Development Licence has recently been awarded.*

*I have written a full and honest account of what we saw to try and give anyone who reads this document a true flavour of life with fracking as we saw it. Anyone who doesn't want all the detail can skip to page 9 for a shorter summary.*

After a long day travelling on Tuesday we checked into our hotel in Clarks Summit, Pennsylvania (PA). The area is beautiful; hundreds of miles of indigenous woodland, although the town itself isn't PA's prettiest. Everyone is incredibly happy and polite. We sit anonymously in the bar and people-watch as numerous guests return from work, most of them dressed in baseball caps and T-shirts, it becomes obvious that they work in the oil and gas industry.

Later, in the restaurant, we talk to a local estate agent: "Prices are booming," he says, "there is hardly anything available due to the demand." He adds that if you are situated next to a fracking rig then that is a different story. You can't sit down too long here without someone greeting you and passing the time of day. We talk to a doctor, an oil worker and a retired police officer. Everyone is very welcoming and seem extremely happy with life.

The next morning we drive to Montrose, Susquehanna County. More woodland stretching across a rolling landscape, then we finally spot a drilling rig, poking out above the trees on a hillside. Our first formal meeting is with Vera Scroggins, a very well know anti fracking campaigner, and her colleague, Craig Stevens, together with Danni and Lee from Look North. Vera has an injunction against her preventing her from being within twenty-five feet of any site owned by drilling company Cabot Oil & Gas. We leave in convoy with Vera as our guide. We stop at a traditional Pennsylvania farm, the rear field rises gracefully then meets the grey stone block of a recently constructed well pad. It is difficult to estimate the size from where we stand, but it is probably the size of 5 football fields; cranes and drilling gear are clearly visible.

Vera, carefully standing outside her exclusion zone, talks at length about how sites such as this have affected the local area. Heavy lorries arrive in convoy carrying water, sand and drilling gear. The fracking site- three thousand feet from her home- took nine months to



build from start to finish during which time she had to keep windows and doors closed to shut out the noise, light and smells. Since then, she tells me, the site has been quiet and produces shale gas without apparent impact on her daily life. A contractor's car cruises by us with huge yellow and black banners on the bonnet and boot stating 'WIDE LOAD". Clearly a convoy is on its way.

We drive on through the crystal clear Pennsylvania morning; this is a stunning rural and farming area. The parallels to Ryedale are striking. Ten minutes later we reach Carter Road, Dimock, an area steeped in fracking controversy that featured in the Gasland video. We stop at a well pad that was successfully fracked around six or seven years ago and has quietly produced shale gas ever since. Dogs bark in the background as we stand by the side of the road. Three things strike you immediately; how small and unobtrusive it is, its proximity to people's homes (only a few hundred feet), and despite being an engineering site, it isn't fenced or protected in any way.



We move on. We meet Bill Ely, mowing his lawn on his John Deere ride-on, great grandchild on his lap. Bill lives with his family in a clapboard single-storey farmhouse a few hundred feet from a number of fracking sites. Bill's water supply has been polluted due to fracking. Cabot Oil were fined \$4.1m in 2010 when methane contaminated the water supplies of around nineteen Dimock families due to an improper well casing (the bit that protects the aquifer from pollutants) and

excessive pressures in Cabot's wells. Like many families in the area, Bill's water comes from an artesian well in his back yard (garden). The well now has a white pipe attached to it projecting six feet into the air to vent the methane that is still present in the water five years later.



Bill shows us the water treatment plant that sits in his garden. It is camouflaged as a garden shed and is filled with some very technical equipment and needs a power supply that could run a large home. Two taps on the outside of the building tell you everything you need to know. The one at the rear spews out water that looks like cloudy lemonade, complete with effervescence. The tap at the front runs clear and fresh, whatever is in the shed works extremely well. Bill won't drink the water though, and I don't blame him, even though methane in water is reputedly harmless to drink. They wash and do their washing in it but drinking water comes from the store, paid for by Cabot.

Bill is remarkably levelheaded considering what his family has had to endure. "For others" he says "fracking has brought money and jobs, for me, it would have been nice if they had never come here."

Nearby lives Ray Kemble, a 6'4" pony-tailed, bear of a man who used to work for the frackers. Ray's 'front yard' hosts a collection of anti-fracking signs and a star spangled banner flying upside down in protest. Strangely, this sparks a thought that these are the first anti-fracking signs we have seen in Susquehanna County. Despite living only a hundred yards or so from Bill, Ray's water is different; clearer but pungent smelling. Ray recoils dramatically from the odour and the cameraman, Lee, is warned strongly not to get any of it on his boots.



What local benefits are there from fracking, we ask? Vera tells us that only 10% of the jobs go to locals and that only 1% receives any direct financial payment. "So why then, don't the other 99% rise up and drive the frackers out of town?" I ask. Vera tells us that the rest are hoping that the benefits will come to them down the line. It is apparently a very polarising issue in the town, some are in favour, some are against, and many are passive.

Next we travel to Wilkes-Barre to meet John Ryder and Michael Bedrin of the Department of Environmental Protection (DEP). The DEP handles all the permitting and monitoring of oil

and gas exploration in Pennsylvania. John now runs a team of 170 people, including 80 Field Inspectors who visit and monitor sites every day. When fracking started in earnest around 2008 there were only two people in the oil and gas team, John and his assistant.

John and Michael are clearly earnest, professional and honest. “We were wet behind the ears in the early days” says John “The producers also struggled to understand the complex geology of the area.” Have there been any instances like Dimock since those early days? No,



but things do still go wrong. Fracking takes place at between 10,000 and 35,000 feet in Pennsylvania and the drill goes through other gas bearing seams on the way down. This gas needs to be held back and they are learning how to do that all the time. The integrity of the well casing as it passes through the aquifer is clearly the key issue. I am no engineer but I can recognise a situation when I see one. At the key stages of the process, site construction, drilling, cementing of the well casings, and fracking, we need

independent, expert engineers crawling all over these sites to make sure that our aquifers stay clean.

John and Michael had seen no instances of pollution or contamination of drinking water from flowback fluid or other chemicals. Methane entering the watercourse or escaping into the atmosphere is their biggest headache.

Has John got enough staff to inspect all the State’s fracking activities? “Probably not.” he replies, but he has a lot more than he did and things are certainly better than they were. The producers are now incentivized to use the best available technologies through faster permitting and are also working to improve practices and safety.

What would they do differently? Plan ahead, get a five-year plan from the producers for fracking activities, make sure they put in good roads, pipelines and have a schedule of work so that the regulators are ahead of the game. Be honest and transparent with the public, inform and educate them on the whole process and provide clear, simple data on what is happening including incidents and issues. They offer to share their direct experiences with UK regulators should they wish to know more. There’s an offer you can’t refuse.

We leave for Altoona, a couple of hours East of Pittsburgh. New Pig Energy, a local business in the town, has developed barrier mats that cover the fracking well pads to prevent spills entering the ground, a fineable offence in PA. Vice-President Beth Powell tells us how their business has thrived due to the fracking boom. They now employ 33 people on this product alone and have started exporting to Australia and China. Beth has ten people from her village alone that she graduated with who work in the fracking supply chain. Health and safety, engineering and contracting - these are all opportunities in the industry. “This area

was dying,” she says, “now it is thriving.” Her colleagues enthusiastically share the same view, they all have friends or family who have found good jobs due to the fracking boom.

The next morning we meet the team from Marcellus Shale Coalition, the region’s gas producer organisation headed by President David J. Spigelmyer. The team gave us a detailed presentation on how the industry has grown from zero to ten thousand wells within a seven-year period. We are told that there are now only 30 active drilling rigs across the State, four years ago there were 114. New activity has subsided as the production has neared peak capacity and driven prices down to new lows. Pennsylvania produces 12.6 billion cubic feet per day, 50% more than the UK’s entire gas consumption. Coalition literature claims that 73% of jobs go to people from Pennsylvania State.

Tom Murphy, Director of Penn State Marcellus Center for Outreach and Research, detailed how the industry has worked with regulators to improve standards and reduce problems. Permit costs for each well drilled have risen from \$100 to \$5,000 to fund the costs of improved regulation and an increased number of field inspections. Operators also pay an impact fee to fund road repairs and improvements. “Good planning is key.” Tom says, “When fracking came to my area we used a one way traffic loop to ease the impact of lorry movements.” When asked about water pollution, he believes the risks are now well covered. Of the 9600 wells fracked in Pennsylvania, Tom says only 20 have suffered well bore gas migration and these were in the early days. “We drink this water as well,” he adds.

We drop in for lunch at Hogfathers, an independent barbecue restaurant in Washington, PA. We talk to our waitress, Tia, bright and bubbly, the kind of all-American waitress you see in the movies. “Is fracking seen as a good thing locally?” we ask. “It’s been amazing for this area, this place is packed now all the time,” she replies. A number of gas producers have located their head offices here. Many of the workers move around with the drilling so not all the jobs created are local, but they obviously do spend money judging by the number of drive through stores.

Fracking times have dropped dramatically as a result of improvements in techniques, what used to take 60 to 70 days now takes 16. We take a trip to some of the recent fracking sites



with Eric Cowden, Community Outreach Manager. Eric shows us a 7 well site that was fracked around 4 years ago. It is situated directly on the roadside; the only sign of activity is a silver pickup truck that leaves the site through the pair of metal five bar gates that guard the entrance. The well pad is situated in a hay field that has recently been cut and baled. Eric tells us that the wells should only need to be re-fracked once in 30 years and that he is not aware of any wells that have had to be fracked again since the boom

began in 2008.

Three trucks about the size of milk tankers pass by us on the road. We leave and visit Eric's parents' farm only a mile or so away. He shows us where a pipeline has recently been cut into the ground to take the gas to its destination. You really would not have known it was there at all.

We visit a well pad under construction. This is a bigger one that will carry 23 wells. Eric explains that they are trying to build fewer, but bigger sites that can take more wells to reduce the impact to the locality. Construction workers are building a road inland so that the site cannot be seen from the road. Cranes and a drilling rig tower over the site.

Next we travel to Pittsburgh, the Steel City. Feels more like stainless steel now, shiny, clean and crisp in the evening sunshine. We meet Bruce Pitt, PhD. Professor and Chair, Environmental and Occupational Health and David Keeler, Dean and Professor, Graduate School of Public and International Affairs, both of Pittsburgh University. Bruce, a very likeable, fatherly man with a wonderful sense of humour, recently published a research paper on the incidence of babies with low birth weights in areas close to fracking zones. According to Bruce, this does not prove that the proximity to the wells caused the lower birth weights, but believes it merits further investigation. If there is indeed a connection, he feels that the most likely cause is air pollution, methane leakages, gaseous toxins from wastewater ponds that are open to the elements (still allowable in US regulations) and diesel fumes from generators and heavy lorries. "Do you see fracking as an opportunity?" I ask. "Maybe, but that opportunity will still be here in five years' time when we know more," replies Bruce.



John talks about the politics of fracking and the importance of independent regulation, engagement, transparency and clear communications with local people. He refers us to an article by one of his colleagues, Shanti Gamper-Rabrinden that sets out how information should be collected and shared with communities.

[http://www.researchgate.net/publication/281284876\\_Information\\_Collection\\_Access\\_and\\_Dissemination\\_to\\_Support\\_Evidence-Based\\_Shale\\_Gas\\_Policies](http://www.researchgate.net/publication/281284876_Information_Collection_Access_and_Dissemination_to_Support_Evidence-Based_Shale_Gas_Policies)

That evening we have dinner with Dr. David York, a turf grass consultant from Valencia, PA and his son, Dave, a local lawyer. I received a very kind email introduction to David by one of my constituents, Robert Laycock, some months ago. At the time, David was suffering the effects of fracking activity to the rear of his home. "My wife and I couldn't sleep because of all the noise and floodlights," he explained.

Surprisingly, David was now much more relaxed about fracking. The work had finished and the site is quietly producing gas without disturbance. "Our gas prices are down around 50%" he adds. David estimated that 75/80% of the general public in the area are in favour of fracking due to the financial benefits and the overall effects on the economy. Dave Jnr.

has had a couple of battles with the frackers in his professional capacity, but only over access problems, which were resolved amicably.

The final day of our trip starts with an early morning meeting with Councilman Corey O'Connor at his offices in the City Hall, Pittsburgh. Corey was first elected in 2011 (he looks too young to be doing a first term, never mind a second) and inherited an anti-fracking stance from his predecessor.

Looking back, he feels that this was a mistake. "If we could go back now, after watching what has happened, we would have zoned it." he says, "The jobs would have been tremendous. People had a lot of concerns at the time but it's really settled now." Due to the ban, the head offices and job creation went elsewhere in the state. "Look at Washington (PA)," he continues "a few years ago it only had a drive thru' and a gas station, now restaurants and hotels have popped up everywhere and Butler County is the fifth fastest growing in the US."



Our final meeting is with the Mars Parent Group, a local campaign group formed by parents of children who attend the five Mars Area School District schools. The group was formed to fight plans to locate a new fracking site half a mile away from the schools. They talk at length about their many concerns, principally the potentially disastrous implications of a blow out and the possible consequences for the safety of the children. I ask for a show of hands on who would want fracking to simply go away, only one or two of the 15 or so parents present keep their hands down.

These people are not habitual activists; they are clearly a decent but very worried and angry group of parents who feel that they are not being represented by anyone. Local zoning is ignored by the frackers and not enforced by the DEP. Politicians, they say, have their campaigns funded by the oil and gas industry so won't speak out. The media is also unwilling to speak out, by their account, as those who benefit directly from shale gas want it to stay. In the US, landowners receive at least 12% of revenue, net of production costs.



Land is often sold without mineral rights so the owners have fracking forced upon them but get no financial benefit. All this has caused division and members of the group talk about the verbal abuse they have had to suffer.

Amy Nassif, leader of the group, says, "This does not belong near people." Amy wants buffer zones of at least two miles from schools, towns and villages.

They speak of their frustration that the fracking industry in the US has been exempted from sections of a number of the major federal environmental laws that protect clean water and air and prevent the release of toxins and chemicals into the environment including the Clean Air Act, Clean Water Act and the Safe Drinking Water Act. As a consequence, it is more difficult to regulate the industry and make sure that pollution does not occur.

New sites are permitted by the DEP and there doesn't appear to be any democratic challenge to the assessment of traffic, noise, light pollution, economic impact or cumulative impact assessment, as is required in the UK. "They are putting these things in the middle of residential areas," says Amy.

We leave to visit a huge ethane 'cracker' plant, effectively a gas refinery. It is hundreds of yards long and expanding at pace; it is very reminiscent of a Teesside chemicals plant. After this we move on to a well pad immediately adjacent to a dairy farm where a new gas



pipeline is in the process of being laid.

It felt very much as if the producers were in the driving seat in terms of when and where fracking activity is taking place in the US. Producers are keen to work with the regulator

to improve standards, but it isn't at all clear that there are appropriate controls on the levels of activity.

On our travels between meetings this week and over dinner each evening, we've chatted about what we've seen and heard. Interesting that the VW scandal has broken at the same time as we've been out here. This episode tells us what most people already know; some businesses, at times, will do what is best for them, rather than what is best for others. We had a saying in at my previous work 'people do what is inspected, not what is expected.' The same goes for business, the regulations and the regulation (the two words have different implications) need to hold the producers' "feet to the fire" at all times.

Some of the hype and some of the scare stories I came here to get away from are true, or have basis in truth and there is potential for massive economic benefit but the industry needs to be very closely regulated and supervised. Standards and regulations have improved but there is so little consideration for and engagement with communities.



## Conclusions

### The Negatives

- In Dimock we saw significant but apparently isolated examples of methane migration into water supplies (unlike the UK, most US households have private water supplies which are supplied direct from boreholes)
- Regulation in the early days between 2004 and 2012 was totally inappropriate
- Significant noise, light and traffic impacts to communities, properties and residents close to fracking sites for 6 to 9 months
- There was concern from residents regarding proposed fracking activity close to schools and residential areas, little/no democratic accountability and a lack of planning controls
- Some significant large associated processing plants e.g. 'cracker' plants and compressor stations
- Despite increases in numbers, there is still a perceived shortage of regulators/monitors
- Regular, numerous, milk-tanker sized lorries on the roads in fracking areas
- Concern regarding unproven but potential associated effects on public health

### The Positives

- We did not see a significant, widespread industrialisation of rural areas
- Economic effects and job creation in the local area were positive
- Associated supply chain businesses were thriving
- Most local people estimated that 75/80% of residents supported fracking (initially, there was a similar proportion against)
- In general, house prices had increased in the areas concerned (unless within a few hundred metres or less of well pads)
- Other than Dimock, we had no direct reports of water pollution and absolutely no reported examples of pollution from wastewater or fracking fluid
- Fracking activity on each well pad lasted 6 to 9 months, after that sites were producing gas quietly and without any requirement for re-drilling or re-fracking. We had no reports of any re-fracking on any sites
- Operators are paying for road improvements and repairs

## The Case for Shale Gas

### Economic Case

Shale gas has the potential to help move the UK to a low-carbon economy whilst also providing greater energy security, helping keep prices down and supporting efforts to tackle climate change and to create 64,500 jobs in the industry and its supply chain.

### Why Now?

Some have asked me the question; why do we have to do this now, why don't we wait and let other countries roll out shale gas exploration and learn from their mistakes? I believe the answer to this question is contained in the biggest issue of all, climate change. Natural Gas has a much lower carbon footprint than coal. According to the report by Professor David J C MacKay FRS and Dr. Timothy J Stone CBE, the carbon footprint of shale gas extraction and use is likely to be around 50% less than that of coal.

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/237330/MacKay\\_Stone\\_shale\\_study\\_report\\_09092013.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/237330/MacKay_Stone_shale_study_report_09092013.pdf)

Environmental campaigners such as Stephen Tindale of Climate Answers and Labour Shadow Energy Spokesperson, Baroness Worthington have expressed support for fracking as a way to reduce carbon emissions. Similarly, the Task Force on Shale recently reported, *"Gas will be needed for several decades to come. But we make two strong recommendations to make sure this happens in the right way. First, there must be immediate progress in developing carbon capture and storage for gas-fired power stations and industrial plant. And second, we recommend that the Government should deploy revenue derived from a developed shale gas industry to investment in R&D and innovation in CCS and low carbon energy generation, storage and distribution."*

<https://www.taskforceonshalegas.uk/reports/third-report>

Shale Gas exploration could provide a stepping stone to a future of renewable energy generation, rather than being a replacement for it. If the Chancellor was confident that the Shale Gas industry would produce significant amounts of revenue to help balance the Nation's books, perhaps there would not be the need to reduce Feed In Tariffs for renewables so soon and so quickly.

Additionally, burning coal in our power stations causes many other health problems. According to a report by the Health and Environment Alliance, coal-fired power stations are responsible for the following effects on UK citizens: 1,600 premature deaths, 68,000 additional days of medication, 363,266 working days lost and more than a million incidents of lower respiratory symptoms. The report states *"As gas-fired power stations emit relatively fewer pollutants per kilowatt hour of electricity than coal-fired power stations, the share of coal in the total energy sector emissions is much higher than its 30% share in the electricity mix. Gas-fired power stations emit negligible amounts of particulate matter and sulphur dioxide."*

[http://www.env-health.org/IMG/pdf/heal\\_briefing\\_what\\_does\\_coal\\_cost\\_health\\_in\\_the\\_uk\\_29112013final1\\_1.pdf](http://www.env-health.org/IMG/pdf/heal_briefing_what_does_coal_cost_health_in_the_uk_29112013final1_1.pdf)

## Is it Safe?

The Environment Agency, DECC, Mineral Protections Authority and the Health and Safety Executive regulate operations. Having met with the Environment Agency, I am confident that our regulations are strong. Fracking will only be allowed outside groundwater source protection areas; according to one representative of the Agency, chances of contamination by fracking fluids and wastewater are entering the 'realms of fantasy'.

I would, however, certainly like to see a clearer, more robust and independent regime of monitoring the regulations. The Environment Agency is already stretched and, at scale, cannot be reasonably expected to carry out truly independent checks on the producer's operations and any consequential effects on the environment.

The International Energy Agency 2012 report on unconventional gas exploration includes in its golden rules "Recognise the case for independent evaluation and verification of environmental performance"

Our current regulations require the producer to instruct a chartered independent contractor to take baseline checks before drilling and to monitor water and air quality before, during and after production occurs. Concerned local residents do not feel that these checks would be truly independent as there is a clear commercial relationship between the producer and the contractor. Would it not make sense for the Environment Agency to instruct the relevant chartered environmental engineers and the bill be reimbursed by the producer?

The Royal Society Report in 2012 states: "The operator commissions and pays for the services of the well examiner.... This might be someone employed by the well operator's organisation. It is important that those carrying out examination work have appropriate levels of impartiality and independence from pressures, especially of a financial nature. Promotion, pay and reward systems should not compromise professional judgement....The independence of the scheme must not be compromised."

The House of Lords Economic Affairs Committee 2013–14 includes the evidence: "the weakest point of the regulatory process concerns the Environment Agency" and said they appear to have "insufficient in-house expertise...and should make it much clearer to the industry and the public exactly how and when they would inspect well sites."

Many are also concerned about the amount of water required and whether it can be safely decontaminated, recycled and contaminates disposed of, particularly on the scale proposed.

## Will it Industrialise the Countryside?

The spoiling of the countryside is another major concern; we cannot allow production of shale gas in a way that industrialises the landscape. The fracking process involves a high number of lorry movements and unsightly infrastructure that could be a real blot on the landscape.

It has already been stated by just one of the companies, Third Energy, that they might drill up to 950 wells on 19 sites in the constituency, which would require hundreds of thousands of lorry movements; all in one of the country's most beautiful counties, with an economy heavily dependent on agriculture and tourism.

NYCC, who will handle any application, will need to take into account the individual and cumulative impact of fracking of noise, light pollution and on other parts of the economy, particularly tourism, and the suitability of our roads to handle additional traffic. The beauty of our countryside is North Yorkshire's main asset and we must protect this at all costs.

In its 2012 report on unconventional gas, the World Energy Outlook stated: "It is an intensive industrial process...and can have major implications for local communities, land use and water resources." And "improperly addressed, these concerns threaten to curb, if not halt, the development of unconventional resources."

I propose clear planning guidance that there must be buffer zones with a minimum distance between sites and from towns, villages and schools.

The Royal Society Report in 2012 recommends recycling and reuse of wastewaters and that water disposal options should be planned from the outset thereby reducing traffic and the impact on local communities.

I believe that local authorities should produce a Local Plan for Shale Gas development in their area, very much in the way they are required to now for housing, employment and retail development. This could make sure that fracking sites are few and far between, suitably located with access to suitable roads to avoid traffic through settlements and well screened.

### Summary Recommendations

For this to be right for Thirsk & Malton, or indeed any other constituency, I believe that we need the following.

- Independent supervision of regulations:
  - Inspectors with experience and qualifications in:
    - Well casing construction and integrity
    - Environmental impact - particularly of air and water pollution
  - No notice inspections
  - Defined minimum frequency of visits

- A 'local plan' for fracking covering a five year rollout and detailed solutions for key concerns:
  - Traffic plans
  - Minimum distance from settlements and schools
  - Impacts on other important parts of our economy
  - Visual impact on the countryside
- Real-time, publicly available environmental monitoring.
- Community financial benefits (estimated at between £5m-£10m per 10-well pad) should then go directly to communities most affected
- Long-term, secure investment in subsidies to nurture renewable energy and Carbon Capture and Storage.

For more information, please contact [kevin.hollinrake.mp@parliament.uk](mailto:kevin.hollinrake.mp@parliament.uk) or call 01347 666880