

Dear Elizaeth Ord,

I am writing to you to address the four matters on the agenda of the wash up session of the Examination in Public for the North Yorkshire Minerals and Waste Joint Plan. I have dealt with each matter under its own heading below.

The joint plan area is faced with a novel industry, that is unconventional hydrocarbons development. Although conventional hydrocarbon development has taken place in the joint plan area for several decades, unconventional hydrocarbon development should still be regarded as novel. This is because it is likely to lead to much more widespread development and adverse impacts than conventional hydrocarbons. I explain the difference between conventional and unconventional hydrocarbons, and the harm likely to be caused by unconventional hydrocarbons, in greater detail below.

As the joint plan area is now faced with the introduction of a novel industry, which, as I explain below is likely to result in severe, adverse impacts, the Precautionary Principle should apply. So far, hydrocarbons industry representatives at the Examination in Public have argued their case based purely on the wording contained within certain paragraphs of the NPPF and the Planning Practice Guidance. They should instead make clear why they believe the measures I recommend below are not necessary. The requirement should be for them to demonstrate that their new industry is safe, rather than for those concerned by the proposed industry to demonstrate that the measures they recommend do not excessively limit flexibility.

You must satisfy yourself that the outcome of the Examination in Public results in a Minerals and Waste Joint Plan that is safe and that avoids unacceptable adverse impacts. You must accept that as Planning Inspector, you have a personal responsibility in this regard.

I look forward to discussing the matters with you further on 13 April.

Yours Sincerely,

Kit Bennett

Policy M17 (4) (i) – justification on the 500m buffer around residential properties and other sensitive receptors

The 500m buffer zone around residential properties and other sensitive receptors should stay in place. Consideration should be given to enlarging it, especially where multiple residences are present. Paragraph 123 of the NPPF states that, “planning policies and decisions should aim to: avoid noise from giving rise to significant adverse impacts on health and quality of life as a result of new development.” Paragraph 124 of the NPPF states that, “planning policies should sustain compliance with and contribute towards EU limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and the cumulative impacts on air quality from individual sites in local areas. Planning decisions should ensure that any new development in Air Quality Management Areas is consistent with the local air quality action plan.” The proposed 500m buffer zone is justified as it is needed to achieve the goals included in these two paragraphs of the NPPF.

Paragraph 143 of the NPPF says that, “ in preparing Local Plans, local planning authorities should: set out environmental criteria, in line with the policies in this Framework, against which planning applications will be assessed so as to ensure that permitted operations do not have unacceptable adverse impacts on the natural and historic environment or human health, including from noise, dust, visual intrusion, traffic, tip- and quarry-slope stability, differential settlement of quarry backfill, mining subsidence, increased flood risk, impacts on the flow and quantity of surface and groundwater and migration of contamination from the site; and take into account the cumulative effects of multiple impacts from individual sites and/or a number of sites in a locality.” The 500m buffer zone is an environmental criteria which aims to ensure that there are not unacceptable adverse impacts on human health. Any criticism of it should be based on it being too small a distance to achieve these goals, instead of alleging that it is too inflexible.

Evidence has already been heard during the Examination in Public regarding the unacceptable adverse impacts that hydrocarbons development at Kirby Misperton in North Yorkshire and West Newton in East Yorkshire have had on air quality. Evidence has also been heard regarding the unacceptable adverse impact that noise at Kirby Misperton has had on local residents. These impacts will become much more severe and widespread if the hydrocarbons industry proceeds with its intentions to develop unconventional hydrocarbons. Although the unconventional hydrocarbons industry is still at an early stage, there is enough information in the public domain to know that this is an industry planning widespread development in the Joint Plan Area. For example, a Times article in December 2017 revealed that INEOS plan to have ten well pads around the border of the North York Moors National Park and that they intend to have between ten and fifteen well pads in each 10km x 10km license area. With each well pad having 10 vertical gas wells. Such widespread hydrocarbons development has been known to cause severe air pollution in the USA as shown by the papers linked to below.

[https://home.chpc.utah.edu/~u0818471/Documents/2014/Continuity/Relevant%20Papers/Uintah%20&%20Air%20Quality/Highly%20Elevated%20VOCs%20in%20UB%20\(Helmig%20et%20al.%202014\).pdf](https://home.chpc.utah.edu/~u0818471/Documents/2014/Continuity/Relevant%20Papers/Uintah%20&%20Air%20Quality/Highly%20Elevated%20VOCs%20in%20UB%20(Helmig%20et%20al.%202014).pdf)

ci.carson.ca.us/content/files/pdfs/planning/oilcodeupdate/staffreports_08082015/Gilman_2013_Source_Sig_VOCs_for_O&G_operations_Colorado.pdf (URL no longer exists)

If unrestricted hydrocarbons development is allowed to proceed within 500m of residential properties and other sensitive receptors, there is reason to believe that the health will be put at risk by the air pollution impacts of that development and that levels of air pollution might become high enough for EU limit values on air pollution to be breached. The Joint Plan area already has two

AQMAs. It should not be necessary to impose more AQMAs, but that necessity might arise, if appropriate measures are not in place to limit the harm caused by hydrocarbons development.

Evidence of the harm that gas development can cause to health has already emerged from the USA. Studies there have shown links between gas development and hospitalisations, migraines, chronic rhinosinusitis, asthma exacerbations, hospitalisation, premature births and birth defects. I have included links to these studies below. The impacts on health become worse with greater proximity of residences to well pads and with the cumulative impacts of multiple gas wells in the vicinity of residences.

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0131093>

<https://hub.jhu.edu/2016/08/25/fracking-health-migraine-sinus-fatigue/>

<https://publichealth.jhu.edu/2016/study-fracking-industry-wells-associated-with-increased-risk-of-asthma-attacks>

<https://publichealth.jhu.edu/2015/study-fracking-industry-wells-associated-with-premature-birth>

<https://ehp.niehs.nih.gov/doi/10.1289/ehp.1306722>

Policy M16 (a) and explanatory text – further explanation on the split between conventional and unconventional and how this has been dealt with in policy provisions

The conventional hydrocarbons industry has been present in the joint plan area for several decades. This conventional hydrocarbons industry does present the risk of adverse impacts and these are addressed in the plan. However the unconventional hydrocarbons industry is new to the joint plan area and the adverse impacts that it is likely to cause are much greater than those caused by the existing, conventional hydrocarbons industry. This is because the development of unconventional hydrocarbons is not merely a slight modification to the hydrocarbons industry, but is instead a major and untested change to that industry. If commercially successful, it will lead to a dramatic intensification of hydrocarbons development in the joint plan area.

Unconventional hydrocarbons development is often characterised by the use of hydraulic fracturing (fracking), but this is not always the case. The proposed exploratory wells at Harthill and Woodsetts in South Yorkshire and at Marsh Lane in Derbyshire are correctly regarded as unconventional hydrocarbons development as they are intended to explore for shale gas. However, the existing proposals for these sites do not include hydraulic fracturing. The proposals are regarded as unconventional hydrocarbons development, because shale gas has only recently become an accessible resource, due to the advent of new technology, including hydraulic fracturing. If the exploration at these three sites is successful, the applicant may submit another planning application for hydraulic fracturing at a later date, but the proposed developments should still be regarded as unconventional hydrocarbons even before that happens, or even if it does not happen.

In other cases hydrocarbons are produced using hydraulic fracturing from rocks that might be regarded as more traditional for hydrocarbons production. These include limestone and sandstone. However the porosity of these rocks can vary. Where they are not porous enough for the hydrocarbons to flow through the rock and the well to the surface under their own pressure, hydraulic fracturing may be needed, if the hydrocarbon present in these rocks are to be produced. As these sources of hydrocarbons need the new technology of hydraulic fracturing to be produced, they too should be regarded as unconventional hydrocarbons. The link below is to a hydrocarbons

industry website, naturalgas.org, which includes such tight gas in the term unconventional natural gas. The article states that terms conventional hydrocarbons and unconventional hydrocarbons can change over time, which may be true. However, to have a definition of unconventional hydrocarbons which is sound over the lifetime of the plan, tight gas must be included. For this reason, it is right that the use of hydraulic fracturing, should be one of the criteria that qualify a proposed development as unconventional hydrocarbons development.

naturalgas.org/overview/unconventional-ng-resources/ (URL no longer exists)

It is clear that the distinction between conventional and unconventional hydrocarbons development and the definition of hydraulic fracturing for the purposes of the plan are closely linked questions. The definition of associated hydraulic fracturing included in the Infrastructure Act does not have to be followed by the plan, as the Infrastructure Act is not planning law. It is also not justified to use this definition in the plan, as the use of up to 999 cubic metres of fluid in each stage, or up to 9,999 cubic metres of fluid overall, would still result in adverse impacts. In order to control adverse impacts appropriately, the definition of unconventional hydrocarbons and the definition of hydraulic fracturing must be clear and inclusive. For this reason I reiterate my opposition to the changes PC62 and PC66 and ask that these changes to the plan be reversed so that the relevant wording reverts to the publication wording.

At the Examination in Public the possibility of removing the distinction between conventional and unconventional hydrocarbons from the plan was discussed. This would not be justified. The novel nature of unconventional hydrocarbon development and its potential for more severe adverse impacts mean that it must be treated with particular care in the planning system.

One distinctive feature of unconventional hydrocarbons development is its use of large volumes of fluid for hydraulic fracturing. Often thousands of cubic metres can be used for each well, leading to large traffic flows as the fluid is brought to the site. When the fluid flows back it has to be taken away to specialist disposal sites outside the joint plan area. This generates further large traffic flows and involves the transportation of hazardous waste. Sometimes the proportion of waste water flowing back to the surface, that must be disposed of in this way is greater than fifty percent of the original fluid used.

All hydrocarbons development is a source of air pollution, but the flowback stage of hydraulic fracturing is a major source of air pollution unique to unconventional hydrocarbons development. The flowback stage presents a hazard to local residents due to the presence of volatile organic compounds in the flowback fluid. As shown in the links I included for my response to the matter of the 500 metre buffer zone, the cumulative effect of such pollution can be very severe.

Perhaps the most important distinguishing feature of unconventional hydrocarbons development is its potential to lead to a dramatic proliferation of well pads and supporting infrastructure. The EY report on shale gas linked to below, forecasts the drilling of 4,000 wells across the UK. As the joint plan area is one of the major areas of interest for unconventional hydrocarbons, a significant proportion of this development would fall within its boundaries. While there are other forecasts of the number of unconventional hydrocarbons wells, the EY report is significant in that it is used by the government to support its 2015 Written Ministerial Statement.

However, the EY report may still be an underestimate. The paper I link to below, written by academics funded by the hydrocarbons industry, warns that industry ambitions for shale gas production may not be met, because the presence of existing buildings and infrastructure limits the amount of land available for well pads. In the case that the number of well pads is limited to an average of 26 in each 10km x 10km license area, the paper argues that the production of shale gas

could be less than forty percent of that forecast by the BGS.

[webforms.ey.com/Publication/vwLUAssets/Getting_ready_for_UK_shale_gas/\\$FILE/EY-Getting-ready-for-UK-shale-gas-April-2014.pdf](http://webforms.ey.com/Publication/vwLUAssets/Getting_ready_for_UK_shale_gas/$FILE/EY-Getting-ready-for-UK-shale-gas-April-2014.pdf) (URL no longer exists)

sciencedirect.com/science/article/abs/pii/S0048969717304096

It should be clear that the development of an average of 26 well pads in each 10km x 10km license area would fundamentally change the joint plan area. The impacts of air pollution, noise and traffic that are associated with hydrocarbons development, would become more widespread, long lasting and severe with each new well pad constructed and with each new well drilled. The rural nature of the joint plan area, known for its tranquillity and attractive landscapes, would be changed irrevocably. The joint plan area would instead become dominated by large scale and widespread industrialisation. When such major changes to the joint plan area are in prospect they must be considered carefully by the planning system. That is why it is right, that there is a distinction between conventional and unconventional hydrocarbons.

Policy M16 (b)(i) - provision of definition for the ‘Areas which Protect the Historic Character and Setting of York’

The emerging Local Plan for York, which is now at the publication draft stage, clearly defines the City's Green Belt and makes clear the importance of this Green Belt for the historic character and setting of the city. The emerging Local Plan gives detailed information on the city's important characteristics, including its compact form, the presence of green wedges bringing open spaces into the heart of the city, the continued existence of historic commons and strays and the importance of the Green Belt for biodiversity. Nine SSSIs are located in the Green Belt, of which three are European protected sites. The Green Belt also contains other sites that are of importance for biodiversity.

In addition to the justification for protecting York's Green Belt contained in the emerging Local Plan, I will add that the Green Belt must be protected so as to preserve the setting of York Minster. This historic cathedral is the tallest and most prominent building in York. It is easily visible in many places outside the built up area of the city. The Minster is a vital part of York's skyline and identity. While it is likely to remain visible even in the case of widespread development, the vulnerability of the setting of this important landmark should not be underestimated. The industrialisation of the landscape that would be brought by development including fracking, or other unconventional hydrocarbons appraisal and production, would entirely change the character of the minsters setting. It would certainly be a change for the worse, as a green and rural landscape would be transformed into an industrial landscape of intensive minerals development with the associated problems of visual intrusion, noise and heavy traffic.

I have described above the difference between conventional and unconventional hydrocarbons development. It is clear that such development is not a suitable form of development for Green Belt land and that the protection in Policy M16 of ‘Areas which Protect the Historic Character and Setting of York’ is entirely justified.

Policy M16 (b) (ii) – further explanation on this policy and why drilling under a National Park/ANOB is considered to be major development.

On this matter I support the statements made at the Examination in Public by the representatives of North York Moors National Park. Developments that include drilling for hydrocarbons under the National Park should be regarded as major development, even if the well pad is located outside the

National Park. The representatives of the National Park correctly identified the major, adverse impacts that such development could have on the National Park. I also note that it is common practice in planning applications which include horizontal drilling for oil and gas, to show the surface and subsurface extent of the development in the application documents. This clearly indicates that both the surface and subsurface extent of a proposed development are relevant in making planning decisions. Applications for horizontal drilling should therefore fall within the remit of all planning authorities within the surface and subsurface footprint of the proposed development.