Mr Stephen Hamilton

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Re application E/2013/0093/F DETI license PL3/10

Dear Mr Hamilton,

I wish to object to the above application for planning permission on the following grounds.

1) Baseline measurements of air, soil and water have not been taken.
2) Baseline health measurements have not been taken.
3) A health impact assessment has not been done.

Despite systematic denial by the oil and gas industry of the health impact of their activities there is rapidly accumulating documented evidence of harm. This harm is not confined to the fracking phase but relates to every stage from bringing chemicals onsite for the first exploration wells to decommissioning and beyond.

In November 2012 a very important piece of research was published entitled “An Exploratory Study of Air Quality near Natural Gas Operations.” [ii] Weekly air sampling for one year revealed that the number of non-methane hydrocarbons (NMHCs) and their concentrations were highest during the initial drilling phase. The drilling phase is the same whether the exploration is for conventional or unconventional oil or gas. In this study Methylene chloride, a toxic solvent was detected 73% of the time, several times in high concentrations. Many of the NMHCs had multiple health effects,

including 30 that affect the endocrine system which is susceptible to chemical impacts at low concentrations- far less than government safety standards. Previous studies[ii] in polluted areas had found that when pregnant women are exposed to polycyclic aromatic hydrocarbons (PAHs) their babies have lower developmental and IQ scores. The levels of PAHs in this study were even higher than the levels known to cause harm to unborn babies.

In May 2012 a study[iii] was published which showed that residents exposed to the air pollutants from wells who were living half a mile or less away were at greater risk for ill health (both cancer and non-cancerous) than residents living further away.

In October 2012 a study in Pennsylvania[iv] documented the 25 most prevalent symptoms reported by the local residents (eg nasal irritation 61% difficulty breathing 41% skin rashes 37% burning eyes 53%) and related them to the air toxins detected. Their conclusion was:

"Contaminants that are associated with oil and gas development are present in air and water in areas where residents are experiencing health symptoms consistent with such exposures"… "Permitting widespread gas development without fully understanding impacts is risking public health"

In June 2012 a Canadian study[v] reports that Northeast British Columbia has experienced increased rates of cancer and other illness due to contaminants and stressors associated with unconventional gas.

In the planning application "*Atmospheric releases associated with oil exploration*" are glossed over. "*Operational engine derived atmospheric pollution*" "*similar to a diesel engine*" is itself significant. The World Health Organisation classifies diesel engine exhaust as "*carcinogenic to humans*" based on sufficient evidence that it is linked to an increased risk of lung cancer, as well as limited evidence linking it to an increased risk of bladder cancer. What Northern Ireland (as well as the rest of the world) needs are strategies to reduce the amount of diesel fumes inhaled, not to give companies permission to contaminate the air with diesel fumes as little as 90metres from family homes.

Significantly what the planning application fails to expand on are the impacts of flaring and cold venting on air quality. Venting will mobilise to the atmosphere hundreds of toxic chemicals which have been stored safely underground for millions of years, as well as the chemicals which have been used during drilling. These include volatile organic compounds such as benzene, ethyl benzene, xylene, toluene, polycyclic aromatic hydrocarbons, hydrogen sulphide, sulphur dioxide, nitrogen oxides and radioactive gases such as radon. This problem is compounded when the gases are burned (flared) when multiple compounds are formed and released into the atmosphere. In addition to the volatile gases heavy metals such as mercury, arsenic, chromium, lead, barium, boron, as well as radioactive materials are mobilised into the atmosphere. Soot, ash, unburned hydrocarbons, particulate matter (PM2.5 which is 30 times smaller than a human hair, and PM10) carbon monoxide, carbon dioxide, ground level ozone and many other compounds add to the pollution burden for anyone unfortunate enough to be living downwind.

The health impacts of this sort of pollution have recently been documented at the highest level. The World Health Organisation (WHO) has this year (2013) released their report "Review of evidence on health aspects of air pollution- REVIHAAP". (vi)They state:

"The adverse effects on health of Particulate Matter (PM) are particularly well documented. There is no evidence of a safe level of exposure or a threshold below no adverse health effects occur."

The WHO report links air pollution to cardiovascular disease and death, atherosclerosis, or hardening of the arteries, respiratory diseases, diabetes, neurological development in children and neurological disorders in adults.

The WHO report goes on to say, "Pollution from PM creates a substantial burden of disease, reducing life expectancy by almost 9 months in Europe. Since even at relatively low concentrations the burden of air pollution on health is significant, effective management of air quality that aims to achieve World Health Organisation guidelines levels is necessary to reduce health risk to a minimum."

Meanwhile a study (vii) by Ole Raaschou –Nielsen et al from the Danish Cancer Society Research Centre in Copenhagen published in The Lancet Oncology in July 2013 found that exposure to particulate air pollution boosts the risk of lung cancer, even at concentrations below the

legal maximum. The study found a cancer risk at every level and confirmed the higher the level the greater the risk.

It is well known that China is the epitome of a highly polluted society. In China the people have been complaining of the effects on their health and this has been downplayed and denied by the relevant authorities. As late as June 2013 a Chinese health official was quoted in the Beijing News refusing to admit that pollution could cause cancer. Just weeks later in July 2013 a three decade medical study was released (viii) establishing the first comprehensive statistical proof linking rising malignancies and pollution on the mainland. The study by the Chinese Centre for Disease Control and Prevention, The Chinese Academy of Science and the Chinese Academy of Medical Sciences paints a dire picture. The death rate from cancer has increased by more than 20% in the monitored counties, with in some surges of more than100%. There are “Cancer villages” where out of 1000 residents 200 have died of cancer and 1/3 of the rest have liver damage.

The oil and gas industry is a highly controversial; and reports of ill health from impacted residents have followed them wherever they have been permitted by governments to undertake their activities. This includes but is not limited to USA, Nigeria, Canada, the Amazon, and Australia where I am personally aware of impacted families (ix). In all cases the health impacts have been denied by industry and overlooked by governments who are blinded by the lure of royalties. The precautionary principle has been systematically ignored. Health impact assessments have never been undertaken.

I now believe that with the publication of these recent reports, any individual or authority that authorises any oil or gas activity in a populated region without prior baseline testing of all the environmental parameters (air, soil and water), baseline health assessments, and a health impact assessment puts themselves in a position where they are liable if harm comes to that population.

Yours sincerely,

Geralyn McCarron MB Bch BAO FRACGP

20 July 2013

[i] An Exploratory Study of Air Quality near Natural Gas Operations http://cogcc.state.co.us/RR_HF2012/setbacks/CommentDocs/Public/TEDX_Setbacks_Comments.pdf

[ii] Update on Hydrofracking http://aapdistrictii.org/update-on-hydrofracking/

[iii] Human health risk assessment of air emissions from development of unconventional natural gas resources May 2012http://www.ncbi.nlm.nih.gov/pubmed/22444058

[iv] Gas Patch Roulette http://www.earthworksaction.org/library/detail/gas_patch_roulette_full_report#.UWBLDntwbIU

[v] Environmental pathways of potential impacts to human health from oil and gas development in northeast British Columbia, Canadahttp://www.nrcresearchpress.com/doi/abs/10.1139/a2012-005#.UWBMJ3twbIU

Vi http://www.euro.who.int/en/what-we-do/health-topics/environment-and-health/air-quality/publications/2013/review-of-evidence-on-health-aspects-of-air-pollution-revihaap-project-final-technical-report

Vii http://press.thelancet.com/lungcancer.pdf

Viii http://www.scmp.com/news/china/article/1282132/landmark-medical-study-offers-first-statistical-link-between-pollution

Ix http://www.catskillcitizens.org/learnmore/2013-04-symptomatology_of_a_gas_field_Geralyn_McCarron.pdf