

## Supporting and Strengthening HB13-1275

My name is Sonia Skakich-Scrima I am a resident of Aurora and the founder of the Arapahoe County concerned citizens group, What the Frack? Arapahoe. I have a Masters degree in developmental psychology, with substantial graduate experience in designing and conducting human research, and 17 years experience as a research coordinator at a medical diagnostic facility.

On behalf of the concerned citizens group, What the Frack?! Arapahoe, I would like to sincerely thank Representative Ginal for writing house bill 1275. This bill sets up a model of exemplary legislative process, with transparent, evidence-based risk assessment linked to legislative decision-making. Our group has been asking for just such objective, scientific assessment of health impacts and risks associated with unconventional drilling since we formed, most recently in our statewide petition for statewide moratorium on all new drilling until comprehensive cost assessment and health risk assessment has been performed for our state. We presented our petition , with over 6000 signatures, to the Governor and Colorado legislators in February.

While we are strongly in support of 1275, we wish to see it strengthened, in order to enable it to accomplish its goal of objectively assessing health risks from oil and gas operations in Colorado Front Range counties. Without such amendment, the study that is currently suggested in the bill would produce a highly constrained assessment of health impacts, that excludes a great deal of relevant data, and would not afford us a representative assessment of the full health risks to Coloradans along the Front Range. Coloradans and their legislative representatives need an accurate assessment of likely health risks, their degree of seriousness , their degree of permanence versus reversability, and their likely means of mitigation.

Below is a review of the bill that explains how the current wording and format would inappropriately constrain the legislature's ability to obtain a representative objective assessment. Attached is a list of summary of changes to consider, for amendments that would resolve many of those issues.

The bill, as currently worded, would fail to capture a sizeable segment of health impact data, producing a very skewed representation of the extent of harm and risk to health. Since Colorado does not have a registry for diseases or disorders specific to the reporting of oil and gas related health impacts, that requires physicians to report illnesses and health injuries suspected to be oil and gas related, there is no current body of representative "existing epidemiological data" to "review". Therefore the bill would more productively be a request to conduct a "study of epidemiological and other relevant data".

In order to assure that such study can objectively assess the full range of health impacts that have developed and are likely to develop in these counties:

- It needs to include comparator groups from other areas of Colorado that have been heavily fracked over a long time period (such as Garfield county), in order to assess the full range of health conditions that can emerge over longer time spans (and not exclude long developing cancers and other conditions from the review!)

-It needs to ensure that the constellation of symptoms and conditions often reported by industry workers and proximal residents are specifically included, such as headaches, gastrointestinal symptoms, frequent nosebleeds, respiratory problems, metallic taste in mouth, pustulent skin rashes, dizziness, impaired memory and concentration, decreased motor control and muscle strength/impaired gait, and cancers. However, such symptoms will be difficult to capture with an epidemiological approach, since there is no registry of such symptoms suspected to be oil and gas related, since these symptoms tend to persist with continued exposure and people stop seeking medical help when there is no remedy at hand and when /or they are unable to afford repeated doctor visits, expensive testing or treatments.

- It needs to ensure that the full gamut of known risks to health are examined, including explosion, fire, methane seep, spills and pit leaks onto land, thermogenic methane migration and frack fluid migration into drinking wells and surface water, hydrogen sulfide exposure, blowout, earthquake, and work site related accidents, silicosis related to sand use, chemical exposure, exposure to radioactive materials. Therefore, it will need to compel access to review of medical reports made by privately retained industry doctors, since the industry compels workers to seek diagnosis and treatment with their industry retained physicians, except in severe emergencies.

- It needs to ensure that diseases and disorders that are known to be associated with exposure to the toxic chemicals used in the industry (as well as the unearthed toxic deep earth materials, such as heavy metals, naturally occurring radioactive materials, and toxic gases such as hydrogen sulfide) are specifically investigated, including neurologic conditions, cardiovascular conditions, psychiatric symptoms, and also endocrine disruption disorders that can impact reproductive health, cause birth defects, impair infant health, and can create DNA degradation that can impact all future progeny, transgenerationally, which may require additional DNA testing to assess (in addition to reproductive failure and birth defect incidence data ; see the peer reviewed published articles of Dr. Theo Colborn).

- It needs to ensure that all health data regarding industry health impacts is fully available for overview. Therefore:

A. Legal cases that have been brought by residents against oil and gas corporations regarding putative health impairment should not be allowed to contain clauses that allow settlement with lifetime gag orders on the health impaired and/or sealing of the case evidence from public review (hiding the health evidence). Such clauses must be declared retroactively unethical and unenforceable, injurious to public health oversight, as is the case in other states.

B. The current Colorado gag order on treating physicians (COGCC's form 35), that prohibits treating physicians from disclosing 'trade secret' oil and gas industry chemicals related to a toxic exposure incident, makes each incident a secret process, thus precluding appropriate sharing of chemical exposure diagnosis and treatment among physicians across the state and in the development of appropriate emergency treatment protocols and in the development of appropriate public health oversight and understanding. This inappropriate gag on physicians and medical science must be immediately removed.

C. The Colorado legal onus on complainants to prove causation of their health impairment by industry processes is an almost insurmountable requirement, especially regarding an industry that holds so much of its process and materials secret and which has exempted itself from federal health and safety laws that would have otherwise produced EPA measurement, oversight, and investigation into toxic air and water emissions and other operational features that can impact public health. This legal presumption must be reversed in Colorado- a claim of health harm should be instead proven by industry not to be the case, since it is the party that holds the bulk of the evidence. )

D. Language in the bill referencing the “taking into consideration cost effectiveness and technical feasibility” should be struck, as it is likely to invalidate the intent of the bill to hold serious health concerns in priority. Such language has had the persistent historical impact of trumping health, environmental and all other concerns of communities, their elected officials, and their elected representatives.

- It needs to ensure that general data trends that emerge are followed up with appropriate objective investigation into source of exposure , as deemed appropriate (e.g., with well site air sampling, mobile backpack air sampling for residents at various proximal distances, blood tests for chemicals known to be used and to be emitted into the air around the well site, as well as water sampling in the case of suspected methane or chemical migration into resident well or water supply). Without such objective data supports, industry is likely to continue to insist that the collected epidemiologic data trends are inconclusive and we will lose the opportunity to investigate sources of health impairment and suggest mitigating solutions

- Data analysis should include specific examination and comparisons of incidence data at various distances from heavy well site or other oil and gas operations., so that meaningful correlation can be established.

- Finally, it must be acknowledged that current industry operations and their current uncaptured emissions of methane are associated with a higher risk of escalated climate change, associated in our region with escalating drought (and decreased agricultural production, culling of livestock numbers, increased forest fires, etc). Scientific predictions from climate scientists and hydrologists retained by the Dept of Interior, released in the spring of 2011, forecast increasing water scarcity for the Rocky Mt region for the next several decades, as associated with climate change impact on our region. More recently, a Columbia University study has predicted a Megadrought to occur in the Rocky Mt region within the next 8 years and possibly irreversible. In this context, of increasing water scarcity, the impact of dwindling water supplies on the health of Coloradans must be examined, related to the high volume water usage in lifespan fracking operations. This must specifically examined since high volume hydrolic fracturing lifespan processes permanently contaminate water with toxic chemicals and deep earth toxins, rendering them unfit for future beneficial use, and in fact approximately 50% of the toxic wastewater is sequestered permanently underground, removed from the hydrologic cycle permanently. Clean water is essential to all life and is essential to public health. Therefore, water supply issues must be urgently closely examined by the legislature in the context of public health issues related to oil and gas development in Colorado, whether via this bill or another bill.

Strengthening HB 13- 1275: Summary of suggested bill changes to accomplish the above

By changing the wording from "review of existing epidemiological data" to "study of epidemiological and other relevant data", the study can access numerous databases that would otherwise not be considered, and can include also active data collection through additional means that it sets up (symptom checklist and health status standardized survey, air sampling ,blood testing, etc).

By oversight committee and research group specific consideration of the additional databases listed above (i.e., legal case data, industry worker health data, COGCC database of accidents and spills, COGCC's complaint registry), additional health impact data can be included. Please consider any necessary language changes to permit research access to those special databases.

However an online registry for suspected oil and gas health impacts report, under the authority and mandate of the Colorado Department of Public Health, would be most productive in producing usable centralized data on perceived oil and gas health impacts, especially if it had the following features:

- A Colorado resident direct input section, where the resident would complete a health assessment and a standardized symptom checklist, along with information regarding their work or home proximity to oil and gas operations, start and frequency of symptoms, etc; this could be followed up for additional review/verification by researchers, as well as for air sampling, blood testing, and other means of additionally investigating exposure pathway for severe cases, etc, as researchers find appropriate, and would also provide the possibility of contact for further assessment or treatment options at county clinics. (For the standardized symptom checklist used in Pavillion Wyoming and in Pennsylvania, see Steinzor, Subra and Sumi, 2013, attached; also consider additions related to companion animal health and livestock health, based on Bamberger and Oswald's concept of sentinel species regarding human health, 2012).
- A Colorado physician /PA/or nurses section, for their direct input of patient health assessment and standardized symptom checklist completion, along with any unusual case notes re presentation, diagnosis and or treatment.
- A Colorado physician training module (with CME credit) on environmental exposure assessment, diagnostic steps and information regarding when blood tests are helpful, when not, available treatment references etc. (including references such as P. Saberi, 2013, attached)

Such a centralized database would resolve many of the issues noted in the analysis of the current bill,including collection of symptom data, could collect health status data and responses to a standardized symptom checklist both for as yet undrilled communities and ones where heavy drilling has already occurred, is capable of being updated with follow up data collection for within subject comparisons as well (as drilling volume increases), and can serve for outreach to those reporting individuals, if they agree to medical or additional research outreach. Its physician function would be invaluable to Colorado physicians, to familiarize them with common oil and gas operations exposure symptoms and with environmental assesement as drilling moves into their communities. Coloradans would welcome such an interactive database, that would be a tangible ongoing commitment to the health of Coloradans regarding oil and gas.

Finally, in order to produce data representative of oil and gas impacts and risks, the one year reporting period with option for additional study seems unrealistic, whereas a multiyear study, with biannual review and yearly reports would seem more feasible. Further, a multiyear commitment represents ongoing legislative commitment to continued objective updating of health impact assessment in Colorado.

Respectfully,

Sonia Skakich-Scrima,  
Founder of What the Frack?! Arapahoe

15011 E Arkansas Dr, Aurora CO 80012 Tel 303-917-5160