

Dear Mr. Robbins, your website would not take the entirety of our comments which are extensive, but intended to be helpful to this supremely important undertaking. So, we are sending them by email. Please acknowledge receipt.

Phil Doe for Be the Change

Official Comments of Be the Change on the state of Colorado's proposed "draft criteria" designed to guide implementation of SB 19-181.

Our comments on the COGCC's proposed "draft objective criteria," DOC, as outlined in your letter of April 19, 2019, are as follows. The COGCC has identified 15 criteria requiring added review because of the changes made to the Colorado Oil and Gas Conservation Act with the passage of SB 19-181. We think that list incomplete as we explain in our comments, and that the proposal, though perhaps well intended, is inconsistent with the requirements of the law. We will have many more comments as the rulemaking process gets underway with the first public hearing scheduled for May 20th.

DOC—1 thru 5, setbacks-- 1) Locations within 1500' of a Building Unit or High Occupancy Building, which include Urban 1 2 Mitigation Area ("UMA") and Large UMA Facility ("LUMAF") locations. 2) Locations within a municipality. 3) Locations within 1500' 1 of a municipal boundary, platted subdivision, or county boundary. 4) Locations within 2,000' 1 of a school property line. 5) Locations within: a) a Floodplain; b) an identified public drinking water supply area (i.e. Rule 317B buffer zone, or the Brighton Public Water System); or c) a sensitive area for water resources.

COMMENT: To our knowledge there is no scientific basis for a 1500-foot setback requirement for high-density urban use (DOC 1), or even a 2000-foot setback for schools (DOC 4). However the fire codes we've reviewed call for fire lines of 1/2 to 1 mile for oil and gas fires. Health studies show adverse health impacts have been detected up to 1 mile from fracking sites, with significant adverse effects detected at up to 1/2 mile. Thus, under the precautionary principle, and to be consistent with legislative intent as voiced by bill sponsor, Senator Mike Foote, the setback in all instances should be at least 1/2 mile. Nothing less can be reasonably seen as protective of public health and safety, as required by law.

We recognize Dr. Larry Wolk, the former head of the CDPHE, was somewhat dismissive of the studies conducted by Dr. Lisa McKinzie of the CSPHE, but while her studies have limitations, as she openly admits, they are overwhelmingly supported by multiple studies as documented in the New York Compendium, <http://www.psr.org/resources/fracking-compendium.html> (The Compendium has been translated into several languages, and is the most complete catalogue of peer reviewed literature on fracking in the world. It is updated periodically. From a review of 685 recent, peer-reviewed publications on fracking, 84% indicated health hazards, risks or adverse outcomes; 69% reported water contamination, and 87% found air pollution.)

Under the precautionary principle, which is the guiding principle behind this law, the 1/2-mile setback is the necessary and reasonable safe standard until newer or better studies suggest modification.

DOC--7) Locations within 1,000' 1 of a Designated Outdoor Activity Area

COMMENT; The same 1/2-mile criteria should apply here for obvious human health and safety reasons.

DOC Criteria—8 and 9—8) Locations with more than 18 tanks or 5,200 barrels of hydrocarbon or produced liquid storage. 9) Locations where the operator does not have a Surface Use Agreement.

COMMENT: We think these criteria and more detailed criteria developed in the Director's *Operator's Guidance*, DOG, https://cogcc.state.co.us/documents/reg/SB_19_181/SB_19_181_Guidance_20190419.pdf, do not adequately address the full force of the new law. This is understandable, for the interface between local governments and the state, the COGCC, and the other state agencies such as the Air Quality Control Commission, the Water Quality Control Commission, the State Board of Health, and the Solid and Hazardous Waste Commission, each with added responsibilities under the new law, is going to be a somewhat evolutionary process, requiring limited territorial marking until a reasonable understanding of shared interests and responsibilities can be discussed and agreed upon. In this regard, the clear intent of the legislation is for local governments and the state to be co-equal on many issues, but on local land use, police powers, and other matters of social wellbeing local governments now have primacy, provided those governments want to take on the responsibility of protecting their citizens. The clear exception of course is engineering well design oversight and approval.

In the DOG discussion of Siting permits, 2 and 2A, the options available to local governments under the new law are not fully explored. For example, in the discussion of siting permits, which seems to us accurate up to the final paragraph, which admits to an exception to the need for Siting permits:

Please note, Form 2s filed to deepen an existing well, sidetrack an existing well, or recomplete an existing well are exempt from this requirement since the well location at issue has already been approved and drilled

To us, the "note" could be interpreted to mean that the activities described are to be automatically approved because they don't require Siting Form 2s. We think this incorrect under the law, and probably not the Director's intent. Clearly, local governments have the opportunity to review any proposal for its potential impacts on local health, safety, and welfare. It may be that under the health and safety criteria, which are the foundational principles of the new law, the local government doesn't want new disruptive well activity, or activity that would extend the life of the well, because of health and safety concerns. For instance, the wells might be too close to residences, schools, or open space. Thus, while a new siting permit would not be needed, the approval of the local government would be required if it had expressed an interest in participating in regulating oil and gas development within its land use area of authority.

Similarly in the *Director's Operators Guidance*, DOG, the discussion of the requirements for evaluating a forced pooling order, pages 5 and 6, are accurate as to the requirements of state law. That is, the "pooling application must provide that the applicant 'owns, or has secured the consent of the owners of, more than forty-five percent of the mineral interests to be pooled,' and that "it has been demonstrated that the lease offer was made in 'good faith.'"

But here again the options open to local governments are much broader, and need to be recognized as necessary to any legitimate decision process, provided the local government has demonstrated a desire to participate in protecting the health and safety of its citizens. For example, the local government might require the approval of a majority of the residents affected by a proposed drill site in or near a neighborhood, provided such an approach could satisfy the test of reasonable and necessary to protect public health, safety, welfare, the environment, and wildlife. Then again, they might just ban fracking in areas of their jurisdiction, just like they might ban strip mining or pit fighting. This could be done under the concept of protecting the public welfare or prohibiting a public nuisance.

Clearly, as the rulemaking progresses, thought should be given to developing decision trees for these and other complicated regulatory issues where the authority is complimentary and/or shared. Given the

good faith effort shown here, we strongly suspect such a process has already begun; nevertheless, any rush to approve new drilling permits does not comply with the law if the local governments involved have not been given time to develop their own procedures. As we read the law, local governments have the first line responsibility, and the COGCC really can't move forward until those responsibilities at the local level have been properly observed and satisfied. This is, after all, a new law that did not grant a reprieve to old, flawed policies. Thus, all proposed permits first need local approval, or after 210 days, the COGCC can undertake review at the request of the driller, but such review does not diminish or countermand the concerns of local government. How these differences are to be resolved must be developed through rulemaking.

DOC--13) A proposed centralized E&P Waste Management Facility.

COMMENT: We agree with this review requirement and would add that as part of the upcoming rulemaking, much more needs to be done to understand the cumulative impacts fracking operations have on our air, land, water. Fortunately for the people of Colorado, SB 91-181 requires these analyzes:

(II) IN CONSULTATION WITH THE DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, EVALUATE AND ADDRESS THE POTENTIAL CUMULATIVE IMPACTS OF OIL AND GAS DEVELOPMENT. p.19

Once again, we think this requirement of law cannot be ignored, even in the interim, and that before any new permits can be issued cumulative impact analysis procedures must be developed in cooperation with the CDPHE, and all permits must be evaluated and tallied under those criteria for cumulative impacts..

These are some of our primary concerns with water, land, and air impacts.

- **Water:** The volume of fresh water needed for fracking is alarming. For example, if all of the roughly 6500 drilling permits now before the COGCC were to be approved, and all were for horizontal wells, the total water demand might be about 65 billion gallons. That is more domestic water than Denver Water supplies to its domestic customers annually. It is in fact, over twice the amount since over half of the domestic water demand gets back into the hydrologic system to be used again and again downstream. From a cumulative impact standpoint, we should want to know how much water will be needed annually for fracking over the next 10 years, and whether that demand is sustainable. The base condition for this analysis should be the estimated amount of water the industry has used since 2008, the advent of the fracking invasion.

With regard to the water sustainability issue, the impact of diminished surface supplies predicted from climate change should also be examined using sensitivity analysis since we are unsure of the exact snowpack and runoff reductions we can expect from a hotter and drier climate in the southern Rockies.

This sort of analysis becomes even more important in light of the efforts to get the taxpayers to underwrite billions of dollars in new projects for water that is not likely to exist in the future with even moderate climate change. Some of this water, we read, is earmarked for fracking.

A thorough review of the Class II injection well process needs to be undertaken, as well. That injection process was implemented in the early 1980s and hasn't undergone any serious review since, even though the original purpose of the program was to allow old played out vertical wells, designated Class II wells, to be reinjected with liquid waste from nearby producing wells to increase underground pressure and thereby stimulate production at the nearby producing well. It is now used to dispose of almost all liquid toxic waste from fracking activities.

Here again the baseline condition should be the amount of toxic liquids the industry has pumped annually into Class II wells since 2008. Using a 10 -year planning horizon, how much toxic liquid will be generated for disposal? Is the present Class II system adequate to handle this volume, or will new wells be required? We know that some Class II wells have been approved for injection into potable water supplies, primarily because those supplies were thought to be too far from demand to ever be tapped for domestic or industrial use. Given the realities of climate change should this program be terminated? From a sustained use standpoint, better tracking of the original estimated capacity of these Class II reservoirs, the approved injection rate, and remaining life expectancy need to be developed and analyzed from a cumulative impact standpoint. For example, how many new disposal wells might be needed under a range of reasonable projected disposal requirements? What are likely to be the local and regional impacts if new wells are required? Clearly, the list could go on, but this kind of data is necessary in any adequate cumulative impact evaluation on fresh water use and toxic liquid disposal.

AIR; A monitoring system that is continuous across the oil patch, upstream and midstream, is necessary. This technology exists and must be employed. Our air quality is so compromised, much of it from oil and gas activity, that nothing less is morally acceptable, and SB 19-181, to be effective, demands it.

Continuous system measurements must be immediately available to state and local governments, free of massage or filtering by the industry. In other words, it must be state run and verifiable by local and regional oversight. Recent articles in the [Colorado Independent](#) and the [Denver Post](#) simply underscore why such a system is nonnegotiable—public trust must be restored. A recent [letter](#) from WildEarth Guardians to Governor Polis, dated April 23, 2019, exposes the general lawlessness that exists within the state’s regulatory system, particularly with regard to the federal Clean Air Act. Specifically, the state has allowing the oil and gas industry to operate without the required clean air permits. As a result, VOCs--a heavy contributor to the ozone problem in the 9 county, front range, air-quality non-attainment area--and poisonous gasses such as benzene have been released without restriction or measurement. The law doubles down on this already illegal activity.

Thus, to be effective and have public acceptance, the monitoring system mandated by the law must incorporate the following:

- It must be continuous and independent of industry manipulation.
- It must be verifiable to preclude tampering.
- It must delineate the various chemicals being released. This capability is essential from a health perspective, for one cannot simultaneously measure the human health effects of oil development’s point source methane (a nontoxic) and benzene (a proximate toxic) contributions with the same probe. Those who talk of VOCs will be looking mainly to the longer term human effects of ozone, thus to dispersing, aging plumes. Such plume emphasis will neglect the proximate toxicity of point benzene because it’s concentrations cannot be accurately captured by plume sampling, continuous or otherwise. To accurately assess the overall health effects of oil production’s point source pollutions, two separate probing techniques will be necessary—one for ozone and one for proximate benzene exposures as their atmospheric behaviors are significantly different.
- It should be compatible and useful to proposed legislation dealing with better measurement of green house gas emissions, and the move toward renewables. See [SB 19-096](#) and [HB 19-1261](#). While 1261 establishes the goal of achieving 90 percent in green house gasses from all sources by 2050, bill 096 seeks the collection of better data on green house gas emissions. Both should be integrated into this monitoring system as a guard against redundancy and bureaucratic jealousies.

LAND: The law, in our judgment, now requires, as with air and water, cumulative impacts on land use be calculated with each new oil and gas development and that the result become part of the public record. We suggest that the oil and gas land-use base include and identify each industry use category: well pads, storage and operational facilities, pipelines by class--including federally monitored interstate pipelines, underground storage reservoirs, compressor stations, access roads, disposal and waste injection facilities, etc. We think it advisable that the land use impacts be delineate and identified by their ownership class: public, private, etc.

Wildlife impacts from oil and gas land use requirements greatly concern us. But our greatest public health concern under the land use category is radioactive frack waste disposal. Measurements of these wastes must conform to scientifically acceptable protocols. The EPA 900 series, currently in use, [fails](#) this test. It underestimates radioactive levels by at least a factor of 100 (and in cases of scale and sludge by as much as 1000 or even 10,000 times).

For example, accurate radiation measurements of frack-waste require an expensive, in-laboratory spectrometry device and at least a 21-day holding period (to account for daughter radiation). This requirement is currently being bypassed. For example, a simple Geiger counter assessment is typically allowing dangerously radioactive waste to be released into ordinary land fills, or worse on area roads as a dust deterrent.

The cost of this independent, third-party, safety measurements of radiation should be borne by the Operator, as should all regulatory costs created by industry activity. Such an approach is consistent with the expectations as forth in 181.

FINANCIAL ASSURANCE: The law now requires “that every operator... provide assurance that it is financially capable of fulfilling EVERY obligation imposed” by SB 19-181, p. 19. And that the operator demonstrate to the commission's satisfaction that it has sufficient net worth to guarantee performance of any EVERY obligation imposed by rule under subsections (11), (12), and (17) of this section. Such THIS ARTICLE 60.THE COMMISSION SHALL ANNUALLY REVIEW THE guarantee and demonstration of net worth. P 20

These requirements are in full force and effect, but this fact seems to have been missed and must be added to the Director's list of critical criteria. Local governments may also demand assurances of financial ability to protect the area's air, land, and water resources.

BONDING: Though the legislation says this requirement can be satisfied through rulemaking. We think it is critical to raise the bonding requirements now because the previous requirements were so obviously weak, inadequate, and industry friendly. The result is the public probably is on the hook for closing old, inadequately bonded wells. In this instance, bonding becomes a very real public welfare issue. Our suggestions are as follows:

- The minimum bonding requirement for any well must be \$350,000. This estimate is based on the actual cost of closing a few orphaned wells at public expense in the past year. Each of these wells cost about \$250,000 to close. But since old wells have to be monitored and reclosed over time—steel corrodes and cement breakdowns—we suggest the addition of \$100,000 as a hedge against future maintenance costs.
- If wells, old or new, threaten public health or the environment by their proximity to people, dedicated open space, or water resources, the costs could be upwards of \$1,000,000. Actual well closings in California and Alberta have reached these cost levels.

- Any approval for sale or transfer of wells must be conditioned on the new owner assuming the bonding requirements outlined above. This extremely important because it is our opinion and that of many financial analysts that the industry is hopelessly in debt, and likely to never recover.
- We think the bonding should be a cash bond held in trust by the state.

SUMMARY: It is our judgment that there is no grace period for the oil and gas industry to adjust to the new law. SB 19-181 changed the way the industry is regulated, and those changes became law when the governor signed the bill. If government changes the speed limit from 60 mph to 25 mph, on a section of road because of health and safety concerns, drivers do not get a grace period to adjust. The same should be true of the oil industry. This may cause delays in approving permits, but the delays are necessary to satisfy the law and protect the people. For too long the industry has had the run of the state. A significant law was passed to make citizen health, safety, and wellbeing, and the protection of the environment and wildlife a condition of continued oil and gas development. As a result new life was breathed into our state constitution's Bill of Rights which posits:

All persons have certain natural, essential and inalienable rights, among which may be reckoned the right of enjoying and defending their lives and liberties; of acquiring, possessing and protecting property; and of seeking and obtaining their safety and happiness. Art II, Sec 3.

Respectfully submitted for Be the Change by Phil Doe, Environmental Director