

City and County of Broomfield
1 DesCombes Drive
Broomfield, CO 80020

January 7, 2019

Dear Mayor, Council, and Staff:

In an effort to keep the community informed, we are requesting an update on a number of items related to oil and gas development in Broomfield. We are focusing on Extraction's operations, but realize that these inquiries have implications for any operator in the future. Given the number of inquiries and their importance, we believe it would be most productive and would appreciate it if we could meet with Tami Yellico, Laura Davis, and Shaun Sullivan to discuss the following:

- **Project Risk Analysis.** The risk analysis has been a requirement since the final negotiations with Extraction and remains a requirement still today. Per the approved CDP dated July 27, 2018, Section (W) Alternative Site Analysis in sub-Section 7.5 states, "*Extraction made other commitments to Broomfield throughout the negotiation process beyond its contractual obligations stemming from the Noble SUA, the Sovereign MOU, and Extraction Supplemental MOU*". The third commitment states, "*Extraction agreed to additional BMPs that addressed Broomfield concerns...*" including item "6. Conduct a risk analysis". This is Extraction's own document in which they state they made a commitment through negotiation to do the risk analysis. In addition, per the required BMPs, Item 55 describes the required Risk Management Plan:

55. Risk Assessment. As part of Operator's application to the City, Operator agrees to provide a risk management plan, which will include the identification of potentials risks, methods of risk avoidance and controls that implement techniques to prevent accidents and losses to reduce the impact or cost after the occurrence of identified potential events.

Therefore, the Risk Management Plan must include:

- **Identification of Potential Risks** (*i.e., define independent risks per the SEC filing, accident history, and any known or anticipated risks*)
- **Risk Analysis** (*Quantitative or Qualitative*)
- **Method of Risk Avoidance** (*i.e., complete elimination of a specific risk*)
- **Method of Risk Controls**
 - Implement techniques to prevent accidents and losses
 - Reduce the impact of cost after the occurrence of identified potential events

We remain very concerned about how the risk analysis has been addressed to date. Extraction agreed to conduct a risk analysis; Extraction then included the Charles Taylor matrix in the first three iterations of the CDP; Extraction then disagreed with the matrix and promptly removed it from the CDP, but refused to do their own analysis; and finally, the City made the risk analysis a condition of the CDP approval (even though the risk analysis is required per the CDP) and then approved the CDP, but stated that, "Broomfield will contract with DNV-GL to complete a risk assessment process" followed by a concerning statement that, "[i]f additional mitigation measures are warranted, Broomfield will take action to address them." It appears that the contract between the City and DNV-GL is for a Hazard Identification (HAZID), rather than a quantitative risk analysis. This all was done despite reassurances from the City and Extraction that Best Management Practices would be required and that health and safety would be protected. In correspondence with Ms. Yellico, DNV-GL noted that most countries, New Jersey, and some

counties (e.g., Contra Costa) require a Quantitative Risk Analysis (QRA), and that they have good software tools to produce one.

Please provide an update on any work completed by DNV-GL to date. How does this compare to the risk analysis and assessment requirements agreed to in the OA and CDP? The reason for completing the risk analysis as part of the alternative site analysis process is to allow for implementation of required changes to reduce risk. Unfortunately, at this point in time as development has begun, the risk analysis becomes increasingly more complex and difficult to implement. This pattern of letting things move ahead without adequately analyzing and addressing risks is very concerning and will likely be dangerous and more costly in the long run.

- **Pipeline Risk Analysis.** Per Exhibit B, Best Management Practices #3 *Use of Pipelines*, page 2 of the Operator Agreement (OA), the agreement states, *“If requested by the City, Operator will conduct a risk analysis to identify potential risks associated with pipelines and measures implemented that are intended to mitigate such risks”*. City Manager Charles Ozaki requested this risk analysis in his letter to Extraction dated August 20, 2018. In response to this request, Eric Christ, Extraction Vice President General Counsel & Corporate Secretary, stated in his letter to CCOB dated Sept 10, 2018, *“Extraction will conduct the [risk] analysis. This analysis would be conducted following the City’s approval of the CDP and prior to the commencement of the Drilling Phase at any Well Site”*.

The Pipeline Risk Analysis must include:

- **Identification of Potential Risks** (e.g., pipeline puncture or rupture including interference, corrosion, incorrect operation, design flaw, or geological hazard)
- **Risk Analysis** (*Quantitative or Qualitative*)
- **Method of Risk Mitigation** (i.e., Risk Avoidance and Risk Limitation)

A risk analysis is typically performed as a preliminary step that is undertaken while significant changes to the project can still be made without major impacts to cost and/or schedule. Pipeline construction has already begun thereby making the process of risk mitigation potentially more costly - both financially and schedule wise. Protection of public health, safety, and welfare, and the environment must be prioritized.

Again, the city is allowing work to proceed before a critical contract requirement has been fulfilled.

- **Root Cause Analysis.** One method of risk avoidance is to understand the root cause of past adverse events and subsequently eliminate those risks in future operations. As such, we continue to seek information about past accidents such as the recent Noble Energy fire, which occurred during well completions and involved Liberty Oilfield Services (the same company slated to do well completions on Extraction’s Broomfield pads) and the Extraction Stromberger fire and explosion. We rely on you to push the state and Extraction for air emission data, root cause analysis, and corrective actions. Will you insist that before such work is done in Broomfield, that we have a root cause analysis and methods of risk avoidance to prevent a similar accident in close proximity to our residential communities?
- **Air Quality Monitoring.** Per the Broomfield website, results of the Air Quality Monitoring and Testing Program will be available online in January 2019. Impacted residents are relying on these data to be available prior to the commencement of oil and gas operations in Broomfield and also to be available near real time on an ongoing basis. Is the City still prepared to launch the Air Quality Monitoring website this month with near real time data and quarterly summaries?

What specific criteria will be used to trigger community health alerts, emergency notifications and responses, and ultimately well or operation shutdown and/or revocation of permits?

Monitoring at the Acme pad and other nearby operations is just as important to Broomfield residents as monitoring the pads within the city limits. What are you doing to proactively work with other communities on both monitoring and responding to reported concerns, incidents, violations, and emergencies?

- **Residential trailers and commuting workers.** Please provide additional information on how many temporary residential trailers will be used during drilling and well completions and the purpose of these trailers. Per Exhibit B, Best Management Practices #39 *Trailers*, page 19 of the Operator Agreement (OA), these trailers are allowed for 90 days following the end of the Completion Phase on a Well Site.

39. Trailers. A construction trailer(s) is permitted as an accessory use during active drilling and well completions or workover operations only. No permanent residential trailers shall be permitted at the Well Sites; provided, however, that until ninety (90) days following the end of the Completion Phase on a Well Site, temporary residential and/or security trailers are permitted, as needed for on-site operations, for exclusive use by the Operator's personnel and the personnel of its subcontractors on a temporary basis.

How long will the temporary residential trailers actually be in place? How many people will be living in them at any given time? Will there be any oversight or requirements re: these units?

In addition, how many workers will be commuting to Broomfield? Will Extraction reduce traffic by bringing workers in by bus or van each day?

Given the complexity and dangerousness of their work and the potential for impact on community safety, will there be any screening for felonies and drug or alcohol-related offenses among these more transient workers?

- **Silica/Sand.** Silica dust has known adverse health effects on workers and other people exposed (https://www.osha.gov/dts/hazardalerts/hydraulic_frac_hazard_alert.pdf). Has the information in the OA and Comprehensive Drilling Plan (CDP) been updated to reflect Extraction's agreement to only transport and store sand in containers? Are there other measures in place to decrease the amount of silica that enters the air, especially on windy days? (The OSHA pdf link above has recommendations.)
- **Wetlands Protection.** Have the requirements of the Municipal Code 17-54-060 (GG) been fulfilled by Extraction's Wetlands Protection plan?

17-54-060 - Use by special review criteria.

(GG) Environmental assessment. Require operator to provide a third-party baseline environmental impact assessment of the proposed oil and gas facility, prior to any construction on the site that includes but is not limited to the following:

- (1) At least one on-site evaluation within one month of the submittal to the city.*
- (2) A map and photographs of the site.*
- (3) Identification and assessment of potential impacts to the environment and wildlife including wetlands; floodplain; ponds; creeks, streams and drainageways; migratory birds and raptors; ground nesting birds; prairie dogs;*

burrowing owls; state and federal threatened and endangered species for both flora and fauna; any other applicable wildlife issues including den sites for mammals, like coyotes and foxes; fish and other aquatic life; wildlife corridors; significant habitat; natural landmarks and prominent natural features such as distinctive rocks and landforms; vegetation including grasses, shrubs and trees; and visual or scenic resources.

(4) Confirmation that the proposed project shall comply with the city's policies for prairie dog conservation and management.

(5) Identification of proposed project design measures or other relevant mitigation measures to avoid unacceptable impacts or to reduce impacts to levels of insignificance.

Prior to construction, operator shall submit a 20-Day Environmental Clearance Letter confirming that any environmental and wildlife conditions identified in the environmental assessment have been mitigated and addressed.

- **Burrowing Owl Investigation.** The burrowing owl situation is an example where wildlife was not protected, perhaps due to a lack of plan and oversight. Following the destruction of burrowing owl habitat, what has been done to follow through with this breach of contract? Was Extraction fined and required to put assurances in place to prevent such type of event from happening again? Has the habitat been restored in any way?
- **Traffic Routes/Truck Usage.** The current approved traffic routes are not feasible because the Sheridan entrance to the Livingston Site has not yet been constructed. It is critical that Extraction employees and their subcontractors follow the contract which includes the approved truck routes. In the meantime, what truck routes have been provided to Extraction and their subcontractors as temporary approved routes?

We understand that 160th is in poor condition and will be unable to handle the proposed truck traffic. When will that road be upgraded? Is Extraction paying for the upgrade?

How is the city monitoring truck routes, the number of trips, load limits, etc? Will there be any checks on how many trucks actually use roads to assure that the agreements reflected in the traffic study, CDP, and OA are met?

It is imperative that all agreements are upheld and in the case where it is determined that an agreement is impossible to uphold, an alternative agreement must be implemented without delay.

- **Robust Inspection Program.** It is our understanding that the City has been diligently creating inspection protocols for the different phases of development (construction, drilling, completion, production, and plug and abandonment) which will correspond with the requirements outlined in the OA, CDP, and the existing oil and gas municipal code. Are these inspection protocols complete? Has this program been reviewed by third parties such as COGCC, outside experts, and other municipalities?

Development has already begun and this robust inspection program is critical to ensuring the protection of public health, safety, and welfare and the environment. It is imperative that the City establish a precedent that they will uphold the OA, CDP, and Municipal Code such that operators (including their subcontractors) are keenly aware that they must fulfill their contractual obligations. However, it currently appears that the City is not using its full authority as can be gleaned from past behaviors and the concerns expressed in this letter. Extraction continues to move forward with their project, in close proximity to our residential communities, without a

focus on their contractual or legal obligations. It is essential that CCOB have a robust monitoring, inspection and enforcement program up and running immediately.

- **Compliance and Methods of Enforcement.** Although Extraction has barely begun their project, they already have had non-compliance issues: destruction of burrowing owl habitat, suspicious odors, and significant road damage during pipeline boring. We are lacking in details about how the city will go about enforcing the OA, CDP, and Municipal Code. Will enforcement always be after the fact? Will “minor” infractions be easily forgiven? Will this mean that Extraction will be disrupting community ease/health/safety for an extended period of time, as in the road/pipe boring situation? Are adequate fines and other legal measures in place to make them comply? Does the City have established methods of enforcement, including well shutdown and revocation of permits? What enforcement powers does the Board of Health have available as has been discussed at several council meetings? In addition, has Extraction provided documentation on their shutdown protocols? Please let us know more about how you are using and plan to use your police powers.
- **Complaint Process.** We appreciate the on-line Complaint Form process and your ability to reach out to residents to give them feedback on their specific complaints. We ask that you also track and publicize historical data (complaints and responses). It is important to maintain such record in a consistent format that is easily quantified and searchable to assess repetitive issues and trends.
- **Spacing Units.** Wildgrass residents continue to have their property rights ignored by Extraction and the COGCC. For 3 months, Wildgrass mineral owners in Sections 12 & 13 have been challenging the fact that they were never given notice about Livingston Boundary Well S19-25-1N. Despite evidence that residents supplied to both Extraction and the COGCC that they hold title to their mineral rights, Extraction has denied that claim and provided no proof as to who does own the mineral rights. The Staff stated on December 18 that it would follow up on this violation, but there has not been any communication with Wildgrass residents about any efforts to speak with Extraction. Is the City still willing to speak to Extraction about this violation of property rights? Are you supporting the *Wildgrass Oil and Gas Committee (WOGc) v. COGCC* lawsuit in any way, e.g., with an Amicus Brief?

In another area, despite permits already being granted by the City and State, residents of McKay Landing just recently received their first lease offers. They may be related to LIVINGSTON S19-25-15N and LIVINGSTON S20-25-2C, boundary wells for which Extraction submitted Form 2s on December 19. Again, the City has a group of residents left to their own devices to figure out the misleading and inadequate information that Extraction sent them. Please clarify the process of force pooling mineral owners in these boundary well areas and whether or not Extraction has the right to access all of the minerals for the entire 84 well plan in Broomfield.

- **Financial Viability.** Oil prices have dropped and Extraction’s stock has hit all-time lows (in \$4-5 range, down from highs of nearly \$24). While Extraction has agreed to plug and abandon some of their existing legacy wells, the addition of 84 new wells only increases the long-term cost of proper plugging and abandonment. COGCC currently estimates that plugging and abandoning a legacy well will cost \$84,000, a number based on the fact that most legacy wells are vertical or directional. The cost to plug and abandon a horizontal well may be closer to \$230,000 or more.

Is the City monitoring Extraction’s financial stability? What will you do if Extraction goes bankrupt or sells to another company sooner than expected? Can the City terminate the current OA if there is no assurance that Extraction will be able to afford the protections they agreed to in both the OA and CDP?

- **Emergency Preparedness.** We understand that Staff and North Metro Fire are doing emergency preparedness drills. Will those drills ever involve the public (including schools) in the evacuation process, as that process will be a crucial part of the safety of residents? Per a recent Broomfield Enterprise article, Staff is preparing for half-mile evacuations. However, it has been necessary to evacuate a one mile radius in recent oil and gas related accidents. The City should also prepare for residents within this 1 mile area or more that may choose to self-evacuate. Broomfield’s Emergency Planning must also account for events at Acme and other nearby sites that are outside of the city.

Has staff responded to Council Member Tessier’s 11/27/18 request to recommend setback distances for Ordinance 2076 based on “the number and types of accidents that happened with the same technology that will be used in BF, the same technology that will be used in Erie and the same technology used in Adams County and other municipalities bordering BF,” and, “the number of feet of each of the blowouts, evacuations, spills, contamination, etc from each of the incidents that occurred with the operations?” This information should also be used to evaluate evacuation radii used for emergency preparedness.

Currently, Lowell Blvd. is the only evacuation route available to Anthem Ranch residents. What will be done to assure that all residents will be able to evacuate quickly? Are there any other emergency escape routes planned?

- **Reverse Setbacks.** What has been done about our concerns expressed in the 301 BHSF letter of November 26? Notice to renters required? Earlier and clearer notification process? Larger area that needs to be notified?
- **Health Impact Study.** Residents who live in close proximity to the Livingston Pad have been actively communicating for almost six months with Staff, Dr. Lisa McKenzie and, to a lesser degree, Council to get a proposal before Council for a health impact study. Dr. McKenzie is currently waiting for answers posed to Staff in a December 20 email. Is Staff still willing to pursue a proposal with Dr. McKenzie? Can Staff get this proposal moved forward for Council approval so that there is adequate time for baseline data gathering, especially before drilling commences?

Thank you for your prompt attention to these matters. This letter has been written with input from members of 301 Broomfield Health and Safety First (301 BHSF), Broomfield Concerned: A Coalition of Neighborhoods (BCCN), and Wildgrass Oil and Gas Committee (WOGc), as well as other members of the community. We look forward to a productive meeting. If you have any questions and to arrange a meeting, please contact Neil Allaire by email at njja@gmail.com or by phone at (303) 589-5381.

Sincerely,

Neil Allaire
Co-Chair, 301 Broomfield Health and Safety First