



CITY COUNCIL AGENDA MEMORANDUM

To: Mayor and City Council
 From: Charles Ozaki, City and County Manager
 Prepared by: Kevin Standbridge, Deputy City and County Manager
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Meeting Date	Agenda Category	Agenda Item #
September 24, 2013	Council Business	9 (a)
Agenda Title:	1. Public Hearing on Proposed Ordinance 1986, Amended - Amending Chapter 17-54, Oil and Gas Land Use Regulations, of the Broomfield Municipal Code 2. Following and Subject to the Results of the Public Hearing, Consideration of Proposed Ordinance 1986 – Second and Final Reading	
Summary		
<ul style="list-style-type: none"> Broomfield last updated its oil and gas regulations in 1993. Proposed Ordinance 1986, which includes the draft new Oil and Gas Regulations incorporating a process for attaining the best management practices for air and water quality protection within the current state regulations and legal framework, is attached. These draft regulations leave the City's current Use by Special Review Permit process for oil and gas wells in place, including hearings before the Planning and Zoning Commission and the City Council while adding significant new performance requirements for applicants. The draft regulations also provide a new alternate path known as an Administrative Approval by Memorandum of Understanding, which contains some best management practices that the City might not otherwise have the legal authority to require with this new process. If an operator voluntarily agrees to these best management practices through a Memorandum of Understanding (MOU) process, a more streamlined and certain outcome is available. Additional comments from state agencies, oil and gas operators, and citizens were received and considered after First Reading of the draft regulations. Additional changes were made to Proposed Ordinance 1986, as indicated in redlined version of the ordinance, which is Attachment A to this Memorandum, and those changes are summarized within this memorandum. 		
Prior Council Action		
<ul style="list-style-type: none"> April 16, 2013–City Council study session on Oil and Gas Issues including presentations from representatives of the Colorado Oil and Gas Conservation Commission, the Colorado Department of Public Health and Environment, the Colorado Municipal League, and the Boulder County Attorney's Office. April 30, 2013–City Council study session regarding Town Hall meeting and direction to staff. May 22, 2013–Town Hall meeting to provide citizens an opportunity to speak about Oil and Gas Issues. June 4, 2013–City Council study session discussion as to next steps in its consideration of oil and gas issues. June 25, 2013–City Council study session to review potential measures to attain health and safety best management practices. July 23, 2013 and July 30, 2013–Executive sessions regarding negotiations. August 6, 2013–City Council study session regarding the draft agreement with Sovereign Operating Company and the draft oil and gas regulations. August 13, 2013–Public Comment was received at the Council meeting regarding the draft agreement and draft regulations. August 20, 2013–City Council study session to review updates to the draft agreement and draft regulations. August 27, 2013–City Council adopted Ordinance 1986 on first reading amending Chapter 17-54, Oil and Gas Land Use Regulations, of the Broomfield Municipal Code. 		
Financial Considerations		
<ul style="list-style-type: none"> Potential costs associated with the application review, inspection, and enforcement. 		
Alternatives		
<ul style="list-style-type: none"> Council could choose to not approve the amendment to the BMC. 		
Proposed Actions/Recommendations		
<ul style="list-style-type: none"> Hold the Public Hearing. Following and subject to the results of the public hearing, it is recommended: <p style="margin-left: 40px;">THAT Ordinance 1986, as amended, be adopted on second and final reading and ordered published in full.</p>		

BACKGROUND

The oil and gas regulations in Broomfield's Municipal Code were last updated in 1993. These existing regulations are in the nature of approving a use by special review permit for each new well, which requires notice and a public hearing before the Planning and Zoning Commission and a public hearing before City Council. The permit granted generally includes requirements in the areas of landscaping and fencing; noise, dust, and light mitigation; traffic circulation plans; and emergency response plans.

Since Broomfield adopted its oil and gas regulations, the state and federal regulations concerning oil and gas activities have increased and the technology associated with drilling operations and techniques has changed. Because of the proliferation of state and federal regulations and changes in technology since Broomfield last adopted oil and gas regulations, any update of Broomfield's regulations necessarily requires consideration of the state of drilling and control technology as well as the regulatory framework that is in place.

As was discussed in some detail in a memorandum of the City and County Attorney to City Council for the study session held on June 4, 2013, local government's authority to regulate oil and gas operations is limited. Local government can regulate oil and gas operations through land use powers, addressing issues such as site plans, surface owner notification, land use coordination, and transportation issues including road impacts. Local governments also have authority to regulate oil and gas operations in areas where the state shares authority, such as air quality, emergency preparedness, and drainage and erosion control. Other than air quality, where local governments have some authority to regulate, local governments may not adopt regulations that are in "operational conflict" with state regulations.

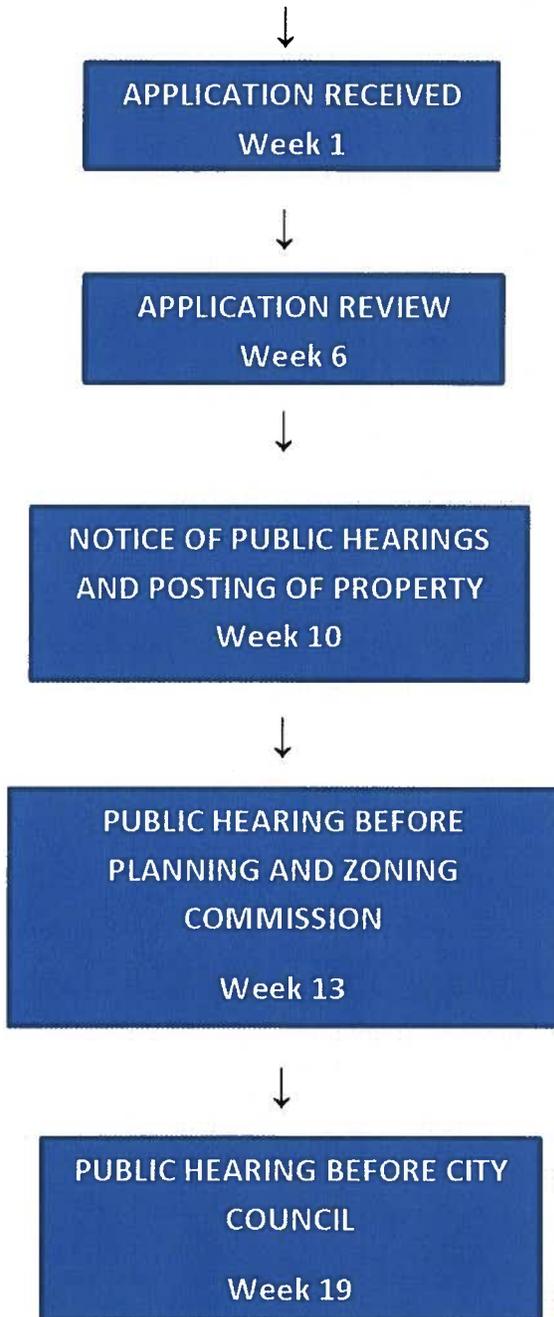
In determining which areas of local regulation that Broomfield wanted to consider, City Council gave the citizens the opportunity for input at the May 22, 2013, Town Hall meeting on oil and gas issues. To assist City Council and staff in considering best management practices and the parameter of state and federal oil and gas operation regulations, experts have been consulted. City Council conducted several study sessions with expert consultants to determine best management practices, the technology associated with those best management practices, and those provisions that City Council wanted to include in updated oil and gas regulations. The background and other material to this extended discussion by the City Council may be found on Broomfield's website at: <http://www.broomfield.org/index.aspx?NID=1820>

PROPOSED OIL AND GAS REGULATIONS

The draft regulations set forth in Ordinance No. 1986 include two paths for approval of drilling operations. The first is the City's standard Use by Special Review process which includes some enhanced BMPs. The draft regulations, set forth in the attached proposed ordinance, leave the City's current Use by Special Review Permit process for oil and gas wells in place. In other words, the process of a hearing before the Planning and Zoning Commission and the City Council would still be required if the operator chooses to go through the Use by Special Review Permit process.

An alternative to the Use by Special Review Permit process is available for the operator under these draft regulations. It is called an Administrative Approval by Memorandum of Understanding. The Administrative Approval by Memorandum of Understanding process is as described in section 17-54-200 in the attached ordinance. A graphic depiction of the two processes and the estimated timeframe for each process is included on the following page.

USE BY SPECIAL REVIEW PROCESS



**ADMINISTRATIVE APPROVAL BY
MEMORANDUM OF
UNDERSTANDING PROCESS**



The Administrative Approval by Memorandum of Understanding process allows for an MOU that includes all the BMPs determined necessary by the City to be administratively approved and signed by the operator and the City and County Manager. There is a variance provision at section 17-54-220 of the attached draft ordinance, which authorizes variances if the objective of the BMC is met or exceeded. The City Council requested at a previous meeting that the City and County Manager report to them any variances approved with the MOU process. Finally, it is important to note that notice and a neighborhood meeting is required for the Administrative Approval by Memorandum of Understanding process and that notice and meeting requirement is described at section 17-54-180(B)(2) of the attached draft ordinance.

There are more than 30 provisions, some in the Use by Special Review process, that exceed current state regulations, some of which are in the Use by Special Review Process and all of which are in the Administrative Approval by Memorandum of Understanding process. Many of these requirements are discussed in greater detail later in this memorandum but are generally set forth below:

- Operator to submit 10 year Comprehensive Development Plan
- Operator is obligated to defend and indemnify the City from claims relating to or arising out of the well sites
- Operator shall provide notice to all owners within 2,640 feet of applications for drilling operations
- Operator shall inspect berms and containment devices at each site on a daily basis
- Operator shall employ closed looped drilling in every circumstance- (Wells drilled, completed and operated using closed loop pitless systems for containment and recycling of drilling, flowback and produced fluids)
- Operator shall anchor all well site equipment
- Operator shall disclose chemicals to City before bringing on site
- Operator shall ensure no visible dust emissions from access roads to extent practical and avoid dust suppression within 300 feet of water
- Operator shall submit safety data sheets for dust suppressants used by operator on roads
- Operator has a duty to minimize emissions from operations including consolidation of facilities, monitoring systems, and gathering and water delivery systems
- Operator shall capture all vapors and route to a control device with at least a 98% vapor capture efficiency and operate such equipment in accordance with manufacturer specifications
- Operator shall employ plunger lifts or other similar technology to control emissions from well blowdowns on new wells. (Over time, liquids build up in the well and reduce and eventually eliminate the production of gas so operators need to clear the liquids out of the well to maintain production. A plunger installed in the well is used to lift the fluids out of the well so that the liquids can be cleaned out with little or no venting.)
- Operator shall be present onsite during all manual blowdowns
- Operator shall employ no bleed pneumatic controllers. (Controllers are equipment used to regulate gas flow and pressure; no bleed pneumatic controllers are a type that do not bleed natural gas into the atmosphere by design.)
- If flaring of gas is allowed under state regulation, flare shall be designed so no visible emissions; Operator shall employ an automatic pilot to ensure flare is operating
- Operator to develop Leak Detection and Repair Plan that requires quarterly inspections of all components on well sites and prompt repair of leaking components, with reporting to City. (Reduce leaks by requiring a Leak Detection and Repair Plan (LDAR) to detect and repair leaking pumps, flanges, seals, connectors, etc., at well sites.)
- Operator to fund ambient air sampling
- Operator to respond to air quality action days and emission reduction where feasible
- Operator to certify annually that it is in compliance with all air quality provisions of the Agreement

- Operator shall utilize green completions for all wells, consistent with future federal rules. (Green completions require gas to be captured at the well head during and immediately after well completion instead of releasing it into the atmosphere or flaring it.)
- Operator to perform water quality monitoring under COGCC Rule 609, which otherwise does not apply in the City. (Rule 609 requires initial baseline samples and subsequent monitoring samples from all available water sources, up to a maximum of four, within ½ mile of the proposed well, with testing to be conducted between six and 12 months and between 60 and 72 months of completion of well. The MOU also requires an additional test at three years.)
- Operator to comply with more stringent requirements for flammable material
- Operator to comply with floodplain requirements under municipal code
- Operator to implement landscaping requirements consistent with a City approved plan
- Operator to implement lighting plan that goes beyond state rules
- Operator shall not engage in routine maintenance of machinery within 300 feet of a water body
- Operator will ensure flowlines are at least 50 feet away from buildings if feasible
- Operator shall record all flowlines and submit to City
- Operator shall remove equipment within 30 days from completion
- Operator shall fund soil gas monitoring
- Operator shall not discharge fluids at well site
- Operator shall not use produced and flowback water for dust suppression
- Operator shall disclose to the City water sources used by the Operator and water disposal methods
- Operator shall provide information to the City regarding plugged and abandoned wells
- Operator to identify City as additional insured on policy; insurance policy limits increased above State minimum
- Operator shall participate in Natural Gas STAR program to encourage innovation in pollution controls at drill sites

Air Quality Requirements

The Use by Special Review requirements and the Administrative Approval by Memorandum of Understanding requirements each contain multiple provisions that address Air Quality Requirements. Sources of emissions from an oil and gas well site include equipment and processes used in drilling, completion, and production activities that are primarily located at or near well sites in active oil and gas fields. Emissions can result from a variety of operational elements (e.g., volatile organic compounds (VOCs) that escape from the wellhead and associated equipment during the drilling and production operations, large stationary power generators, increased truck traffic, etc.); these emissions can negatively impact air quality. The types of emissions include smog-forming VOCs and oxides of nitrogen, diesel particulates, silica dust, benzene, methane, and carbon dioxide.

COGCC requires green completions for all oil and gas wells except low pressure wells, exploratory wells, wells not near a sales line, or where green completion practices are not otherwise technically and economically feasible. Colorado Air Quality Control Commission (AQCC) and/or COGCC rules require that control emissions from certain oil and gas equipment, i.e., certain condensate tanks, glycol dehydrators, pneumatic controllers, and certain engines, be controlled. The required controls vary depending on the size, type and location of equipment. For example, vapors from condensate tank batteries with actual emission in excess of 20 tons per year require that emissions be controlled by 95%. These rules allow for the use of devices to capture and return vapor to the process stream or route the vapors to a combustion device. Certain other types of equipment are subject to other controls, such as certain glycol dehydrators, which are subject to a 90% control requirement. Smaller tanks may not be subject to any controls.

The CDPHE is currently engaged in a process that could lead to a modification of the state air quality control regulations for oil and gas operations. A rulemaking may occur in the fall of this year or early in 2014, which rules could provide for additional controls at oil and gas facilities in the state. Under the Clean Air Act, the Environmental Protection Agency (EPA) has the authority to regulate emissions from oil and gas activities. The EPA enacted rules in 2012 which apply to new sources, some of which took effect last year while others take effect on a delayed implementation timeframe. Part of the recent federal rules is also being further evaluated and could be modified. Currently, federal rules require operators to combust emissions during the completion of all hydraulically fractured gas wells and reduce leaks from seals used on certain compressors, with certain exceptions. Beginning in January 2015, operators will need to capture, rather than combust, completion emissions from most gas wells. As of October of this year, operators also must install low-bleed pneumatic controllers, but this requirement already applies under state law to operators in the City. It is anticipated that the EPA will finalize additional requirements for storage vessels later this summer. Both processes require complying with new or updated rules or regulations.

The draft regulations either in the Use by Special Review (USR) and/or the Administrative Approval by Memorandum of Understanding (MOU) contain air quality requirements that address emissions from drilling operations, leaks from equipment, and periodic air quality testing at the well sites. Examples of where air quality requirements in the draft ordinance exceed state regulatory requirements are summarized in the chart below.

Air Quality - State Requirement (COGCC OR AQCC)	Proposed Broomfield Requirement
No requirement on use of electric equipment to minimize emissions at well sites	Operator to take all reasonable efforts to use electric powered engines for motors, compressors, and drilling and production equipment, but if not economically feasible or practical may use propane or natural gas, but not diesel. (MOU)
Minimize dust emissions on roads; no use of flowback water for dust suppression	Minimize dust emissions so there are no visible dust emissions from access roads or site to the extent practical given wind conditions; no untreated or produced water or other fluids may be used in dust suppression; operator to avoid dust suppression activities within 300 feet of high water mark of waterbody; operator to submit safety data sheet for chemical based dust suppressant prior to use.(MOU)
No duty to submit plan for approval that requires operator to minimize emissions	General duty to minimize emissions through the development of a plan approved by the city concerning operations, procedures, and field design features including: consolidation of product treatment and storage facilities; centralization of compression facilities; liquid gathering and water delivery systems; and telemetric control and monitoring systems.(USR & MOU)
Capture vapors from condensate tanks route to device with 95% control or destruction efficiency; certain glycol dehydrators required to control emissions by 90%	Capture and route all vapor to device with at least a 98% control or destruction efficiency and operate such equipment in accordance with manufacturer specifications. (USR & MOU)
No requirement to use plunger	Requirement to use plunger lift or other similar technology to

lifts; no requirement to be onsite for manual blowdowns	control emissions from the motor control valves; for manual blowdowns, requires operator to be onsite.
Operator to install low or no - bleed pneumatic controllers where pneumatic controls in use at drill sites	Operator to employ only no-bleed pneumatic controllers (pneumatic controllers are equipment used to regulate gas flow and pressure; no bleed are a type that does not bleed natural gas into the atmosphere by design).(MOU)
Venting is allowed if notice given to COGCC, but COGCC could require flaring in some cases	No venting of gas is allowed.(USR & MOU)
No specific requirement for flares, but CDPHE permit could require controls on some flares in some cases	Where flaring is allowed, it must be conducted so flare unit operates at 98% or higher vapor destruction efficiency; flare unit to be operated so no visible emissions consistent with federal regulations; flare unit to be operated with flame present at all times when emissions to be vented; automatic pilot and continuous ignition system required.(MOU)
No requirement for Leak Detection and Repair Plan, except in limited circumstances, and in those cases, requirements for program are limited to liquid leaks, are not well defined or subject to approval	Leak Detection and Repair Program requires sampling on quarterly basis; operator to submit plan to be approved by City.(USR & MOU)
No requirement for Air Sampling Program	Air Sampling Program funded, in part, by Operator, including baseline sampling prior to drilling, sampling during drilling and ongoing monitoring.
CDPHE issues recommendations on air quality action days, not binding on operators i.e. tanks above certain size in non-attainment area	Annual certification by operator of compliance with air quality requirements of the Agreement.(USR & MOU)
Green Completions required for gas to be captured at the well head during and immediately after well completion instead of releasing it into the atmosphere or flaring it, but may be exceptions	Green completions required and venting is prohibited; temporary flowback flaring and oxidizing equipment is required; operator to comply with more stringent federal requirements now, even though those rules are not effective until 2015.(MOU)

Water Quality Issues

During the drilling/development phase, water is required by oil and gas operators for dust control, making concrete, and in the stimulation of wells. For well sites in Broomfield, water is trucked in from off-site or transported through temporary pipelines, but none of the water used is sold or provided to operators from Broomfield. A well must be completed properly such that subsurface formations are sealed off by the well casing and cement to avoid impact to aquifers.

Soils compacted on existing roads, new access roads, and well pads may generate more stormwater runoff than undisturbed sites. The increased stormwater runoff could lead to higher peak storm flows into streams, potentially increasing erosion of the channel banks.

Primary waste during production is produced water, which can comprise 98% of material brought to the surface during the drilling operations. Such water can be disposed of or recycled by operators.

COGCC regulates most aspects of underground drilling operations, including well bore construction requirements, to protect surface and groundwater during drilling and operations and soil gas

monitoring to assess well casing integrity. Water quality testing and monitoring is governed by different COGCC rules for the Greater Wattenberg Area (GWA) than the remainder of the State. The northeast part of Broomfield is situated in the GWA. The GWA has been called Colorado's most productive oil and gas field and currently is under intense development. COGCC Rule 609 is the most stringent rule on water quality monitoring and requires initial baseline samples and subsequent monitoring samples from all available water sources up to a maximum of four within ½ mile of the proposed well, with testing to be conducted between six and 12 months and between 60 and 72 months of completion of well. Rule 609 does not apply in the GWA. Instead, the COGCC requires only one test well, and it need only be tested once, and the suite of chemicals to be tested for is narrower than the suite under Rule 609. The Administrative Approval by Memorandum of Understanding requirements in the draft ordinance requires Rule 609 compliance.

State Water Quality Requirements	Proposed Broomfield Water Quality Requirements
Compliance with COGCC Rule 318 which requires fewer water sources to be tested and less frequent testing	Compliance with COGCC Rule 609 is required with initial baseline samples and subsequent monitoring samples from all available water sources up to a maximum of four within ½ mile of the proposed well, with testing to be conducted between six and 12 months and between 60 and 72 months of completion of well. An additional test at three years is required.(MOU)
No soil gas monitoring requirement	Provides for soil gas monitoring funded, in part, by the operator.(MOU)

Inspections/Enforcement

City personnel have the right to enter upon private property after reasonable notification to the operator, which provides the operator an opportunity to be present. There are many technical reporting requirements and field inspections that are inherent to the proposed regulations. It is anticipated that the City will work with other Front Range communities, if timing permits, to hire an inspector for these purposes or the City may hire or contract for its own inspection activity.

The City may use the information collected on the inspections to enforce the requirements of the regulations through Municipal Court, which enforcement may include fines and/or jail time, or the City has authority to terminate permits or MOUs for certain violations. The requirements of MOUs may be made requirements on state permits, so that the City may also report violations to the appropriate state officials for enforcement by the state.

PROPOSED CHANGES TO THE ORDINANCE ON SECOND READING

Additional comments from state agencies, oil and gas operators, and citizens were received and considered after First Reading of the ordinance. Additional changes were made, as indicated in the redlined version of the ordinance, which is Attachment A to this Memorandum. The additional changes to the draft ordinance are summarized by section number below:

- Section 17-54-020 (J) 7 (R) - The definitions of operator and wellhead are changed to be consistent with COGCC definitions for clarity and uniformity;
- Section 17-54-050 (C) – This section concerns a site plan requirement for well sites and the reference to 400 feet was changed to 500 feet broadening the distance for which operator must show all surface improvements on site plan;
- Section 17-54-050 (I) - This section concerns a visual plan requirement and a reference to COGCC Rule 804 was added for more certainty by operator and city, as to the paint colors of facilities;
- Section 17-54-050(K)(5) - This section concerns the leak detection plan requirement and provides clarification that leak detection testing starts 30 days after equipment is put in use;
- Section 17-54-050 (N)(1) - This section concerns the vicinity maps for well sites that an operator must provide and requires the radius for visible water bodies that an operator must show on such vicinity map be increased from 400 feet to 500 feet for use by special review applications and to 1/2 mile for administrative approval applications;
- Section 17-54-080 –This section concerns the noise plan an operator must provide and adds a reference to COGCC Rule 802;
- Two sections have been modified to add requirements that an operator test for dissolved metals, including arsenic, mercury, uranium, radium, and other metals, as requested by the city, in water testing requirements(section17-54-200 (A)(3)(aa)) and spill requirements (section17-54-200 (A)(3)(II)), based on citizen concerns that produced water or water sources may have such dissolved metals present as a result of certain activities.
- Section 17-54-150 is amended to require compliance with the Flood Plain provisions of the Broomfield Municipal Code in the USR process to the extent applicable.

PROPOSED ACTIONS / RECOMMENDATIONS

- Hold the Public Hearing.
- Following and subject to the results of the public hearing, it is recommended:

That Ordinance 1986, as amended, be adopted on second and final reading and ordered published in full.