

Colorado Oil and Gas Conservation Commission Cost-Benefit and Regulatory Analysis

The Colorado Oil and Gas Conservation Commission (“Commission”) staff has prepared this cost benefit and regulatory analysis to provide additional information to the Commission, parties, and public, and to comply with the Administrative Procedure Act (“APA”). As contemplated by the APA, this analysis addresses each of the proposed regulatory amendments, and provides information on its purpose, its anticipated benefits and costs, the persons affected, and certain alternatives.

Because of the importance of and interest in this rulemaking, the Commission staff voluntarily began preparing this analysis shortly after the draft rules were completed and posted on the Commission’s website on March 31, 2008. To this end, the staff requested cost information from the oil and gas industry, local governments, and other stakeholders, but none of those parties provided responsive information. Therefore, the staff had to develop the analysis itself, in consultation with the Department of Public Health and the Environment, the Division of Wildlife, and consultants Stratus Consulting, Inc. and Economic Advisors, Inc. As directed by the APA, the staff is making this analysis available to the public five days before the rulemaking hearing commences on May 22, 2008.

Statutory Requirements

The APA serves as the legal authority for this rule-making process,¹ and it sets forth requirements for both cost-benefit and regulatory analyses. Under the APA, the Department of Regulatory Agencies (“DORA”) may direct an agency engaged in a rule-making to conduct a cost-benefit analysis.² Any such request must occur at least twenty days prior to the hearing on the rules, and the cost benefit analysis must be submitted to DORA and made available to the public at least five days prior to the hearing.³ The cost benefit analysis must include a good faith description of the reason for the rule, the anticipated economic benefits and costs, any adverse effects on certain economic sectors and factors, and the costs and benefits of at least two alternatives.

Also under the APA, any person may request an agency engaged in a rule-making to prepare a regulatory analysis. Any such request must occur at least fifteen days prior to the hearing on the rules, and the cost benefit analysis must be made available to the public at least five days prior to the hearing. The regulatory analysis must include a good faith discussion of the classes of persons who will be affected, the probable quantitative and qualitative impacts on such classes, the probable costs to the agency for implementation and enforcement, a comparison of the probable costs and benefits of the proposed rule to those of inaction, whether there are less costly or intrusive alternatives,

¹ See C.R.S. § 24-4-101 *et. seq.*

² *Id.* at § 24-4-103(2.5)(a).

³ *Id.*

and any alternatives. The analysis must include quantification of the data to the extent practicable and take account of both short-term and long-term consequences.⁴

So long as a cost benefit or regulatory analysis is undertaken in good faith it satisfies the APA.⁵

Preparation of Analysis

Recognizing the importance of and public interest in this rule-making, the COGCC staff voluntarily began preparing both a cost benefit and a regulatory analysis of the draft rules shortly after the rules were completed and posted on the Commission's website on March 31, 2008.⁶ In an effort to consolidate possibly redundant information, the staff has combined both analyses into a common format that addresses: the purpose of the proposed rule; the resulting benefits and costs and the parties receiving or bearing those benefits and costs; any adverse effects on certain economic or geographic sectors; and a comparison of the costs and benefits for alternatives considered and an explanation why those alternatives were rejected. A copy of the form that the staff developed for this purpose is attached as Appendix 1.

At the outset of this process, the Commission staff sought cost and benefit information from the regulated community and other stakeholders. To this end, the staff developed and circulated on April 11, 2008 a detailed, seven-page, fourteen question questionnaire regarding the anticipated costs and savings associated with the draft rules, as well as the impacts on industry operations and suggested alternatives. This questionnaire was electronically sent to more than 200 persons who participated as stakeholders in the rulemaking process, including more than 50 representatives of the oil and gas industry and a number of representatives of local governments in oil and gas producing regions. A copy of the questionnaire is attached as Appendix 2. The staff also held a meeting on April 21, 2008, to discuss the questionnaire with approximately 30 stakeholder representatives in person and by conference telephone, including representatives of the oil and gas industry, local governments, and conservation and wildlife groups.

None of the meeting participants raised any questions or made any comments about the questionnaire, except that the Colorado Oil and Gas Association ("COGA") and the Colorado Petroleum Association ("CPA") advised the staff that they and their members would not respond. By letter, COGA stated that the questionnaire sought information that would inform COGA's prehearing statement, and that it would be "inappropriate and prejudicial" to provide such information to the Commission before the prehearing statements are due. COGA also explained that the questionnaire "exceeds the time and

⁴ *Id. at* § 24-4-103(4.5).

⁵ *Id. at* § 24-4-103(2.5)(d) & § 24-4-103(4.5)(d).

⁶ DORA has not requested the preparation of a cost benefit analysis, and therefore the preparation of such an analysis is not required under the APA. Nevertheless, the Commission staff has informed DORA that it is voluntarily preparing such an analysis and that it will provide DORA with a copy of the analysis by May 17, 2008. A regulatory analysis is required because Pioneer Natural Resources USA Inc. filed a motion on May 8, 2008 requesting such an analysis. That motion triggered the APA requirement for a regulatory analysis.

resources available to COGA, as we are stretched to the limit in preparing our own case.” In a similar letter, CPA stated that it could not respond to the questionnaire because it was “in the midst of preparing [its] presentation and filings for the hearing.” CPA also stated that it was “not proper” for the Commission staff to have sent the questionnaire to local governments, non-governmental organizations, and other non-industry stakeholders. Copies of both letters are attached as Appendix 3. Ultimately, the staff received only two responses to the questionnaire, both from the Oil and Gas Accountability Project.

Consequently, the staff has had to prepare this analysis without any information or input from the regulated community or most other stakeholders. Under these circumstances, the staff has relied upon its own expertise as well as input from the Department of Public Health and the Environment and the Division of Wildlife. The staff has also consulted with Stratus Consulting, Inc. regarding the potential benefits associated with the draft rules, and Economic Advisors, Inc. regarding cost benefit analysis generally. A report by Stratus regarding the potential benefits is attached as Appendix 4. Finally, the staff has consulted with staff at DORA regarding the APA cost benefit requirements as well as the scope and content of similar analyses prepared by other state agencies. This work has involved more than 300 hours of staff time and the results are set forth below with respect to each of the draft rules.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 205 (amended) - ACCESS TO RECORDS

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)] and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

The proposed changes to the existing regulation respond to legislative mandates included in HB07-1341, which direct the Colorado Oil and Gas Conservation Commission (COGCC) to promulgate rules, in consultation with the Department of Public Health and Environment (CDPHE), to protect the health, safety and welfare of the general public in the conduct of oil and gas operations. The proposed changes were designed specifically facilitate a better understanding of impacts from the chemicals introduced into the environment during oil and gas exploration and production operations. The proposed changes include requirements that operators maintain and update, on a bi-monthly basis and by well or oil and gas facility, an inventory of all chemicals used, by chemical name, during operations. Operators must maintain this inventory through the life of the project and provide it to the COGCC within 3 business days of a written request for it. This information will be entitled to protection under Colorado Law as a trade secret.

This provision is needed because there is presently no mechanism for fully understanding and evaluating:

- What oil and gas production chemicals are being used in Colorado;
- How and to what extent they are being introduced into environmental systems (water, soil and air);
- Whether these chemicals affect public health and safety, particularly in oil and gas producing regions where industrial and residential land uses are intertwined, and
- Emergency spills and determining appropriate responses.

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

The benefits of the proposed rule include:

- A needed more comprehensive understanding of the chemicals used in oil and gas exploration and production operations; including how they are used, where they are used and how much of them are used, which will inure to the benefit of the general public and public health professionals by allowing regulators to make better decisions that will better mitigate risk.
- Allow public health professionals to evaluate public health risk in certain oil and gas regions using real data on the chemical used during operations and source pathways and receptors for the chemicals, which will inure to the benefit of the public generally by resulting in better information about the risks of public health impacts.
- More inclusive, effective and protective emergency spill and response programs, which will inure to the benefit of the public as well as emergency responders.

When implemented this provision will address the needs stated above.

3) *Please provide*

- a) a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

The proposed regulation will require all oil and gas operators to maintain records of chemicals they use and to update them on a bi-monthly basis. In some cases, documenting this information could require operators to request their suppliers to provide specific information about the chemicals they supply (as opposed to trade names). However, the chemical inventories will not have to be routinely filed with the state. They need only to be provided upon request. For a small number of operators, new environmental compliance software and staff could be required; however this will be rare, since many companies will already require and use such software and staff to track a host of other applicable environmental compliance reporting and recording keeping requirements (see below).

COGCC solicited cost estimates earlier this year from the industry for this and all other aspects of these proposed rules. No estimates were provided. However, based on reporting recordkeeping experience within government, we estimate this proposed provision could initially require oil and gas operators to spend up to about ¼ FTE (\$25,000), depending on how many oil and gas facilities they operate. Over time, annual costs will drop. This rule is thus expected to have minimal impact on economic competitiveness, job creation, and state revenues.

There will be no measurable additional costs incurred by government because of proposed provision. In fact, some savings may occur because government staff will be able to acquire information it previously was unable to acquire and had to sample for and/or this information will be retrievable in a significantly more efficient manner. Minor costs associated with staff review of variance requests and enforcement are expected, but these costs are considered under costs for other proposed rules.

4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

Many companies already have software and staff to track a host of applicable environmental compliance reporting and recording keeping requirements, including some of all of the following:

- SARA Title III chemical databases and Chemical List Extension reporting
- Material Safety Data Sheet Management, Authoring and OSHA compliance
- Clean Air Act Title V reporting
- Clean Air Act Title III Hazardous Air Pollutants reporting
- NPDES permit conditions tracking
- Waste management and RCRA compliance

For these reasons, we do not believe that the proposed regulation will result in any adverse effects of the proposed rule on small businesses, consumers, private markets, or state revenues. The regulation will apply to all oil and gas operators to maintain the chemical inventory and comply with the other provisions of Rule 205, and so it will not result in any adverse effects on any particular geographic region.

5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

We considered several alternatives, including taking no action, requiring public disclosure of information obtained pursuant to Rule 205 and allowing operators to use Material Safety Data Sheets (MSDS), required under OSHA statutes. Taking no action would allow the current potential risk to public health from oil and gas exploration and production operations to continue and, over time increase, due to rapid growth and density of oil and gas development in Colorado, particularly in regions where population and development are intertwined. Potential risk of environmental contamination, including to ground and surface water and air quality (via evaporation) would also increase. We therefore did not select the no action alternative. We considered but did not ultimately recommend an alternative providing for public disclosure of information obtained pursuant to Rule 205. We concluded that so long as the information is available

to the OGCC and CDPHE in a timely and efficient manner, the proposed regulation was appropriately protective both of public health concerns and proprietary interests in confidentiality. There are no less expensive or more cost-effective options for achieving the protections in the proposed rules. We considered requiring operators to submit only MSDS sheets to satisfy the goals of this rule, but determined that doing so would result in data gaps that would prevent COGCC and CDPHE from fully evaluating impacts from oil and gas chemical use and therefore protecting public health, welfare and the environment.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 206 (amended) - REPORTS

1) Please provide

- a) a description of the proposed rule,*
- b) a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)]
and*
- c) a reference to the statute(s) providing authority for the proposed rule.*

The proposed changes to the existing regulation respond to legislative mandates included in HB07-1341, which direct the Colorado Oil and Gas Conservation Commission (COGCC) to promulgate rules, in consultation with the Department of Public Health and Environment (CDPHE), to protect the health, safety and welfare of the general public in the conduct of oil and gas operations. C.R.S. § 34-60-106(11)(a)(II).

To satisfy these mandates, this proposed rule requires operators in the Piceance Basin, where oil and gas development rates are presently the highest, to complete and retain a Compliance Checklist for each facility; and to update it annually. The proposed checklist addresses five specific proposed rules: stormwater management, drinking water protection, odor management, E & P waste management and chemical inventory maintenance.

The tremendous rate and volume of natural gas development in Colorado, particularly in the Piceance Basin, over the last few years has not only increased the demand for required permits, but has also increased the need for compliance inspections. The proposed Compliance Checklist responds to this need.

Ensuring all new facilities are constructed and operated in compliance with regulatory requirements is challenging made even more difficult when the rate of growth in the number of new facilities outpaces the agency's ability to regulate effectively, and when the facilities are located in far-ranging and remote areas of the state. Where there is a failure to comply with regulatory requirements, the reason may be that the onsite operator simply was unaware of the regulatory requirement, or that the operator failed to adequately plan for and implement applicable requirements.

Traditional methods of ensuring compliance, using inspections and enforcement, remain necessary and valuable, but these methods may not be timely or efficient, particularly when an industry is expanding as rapidly as the oil and gas industry in Colorado. Other tools can be used to assist in assuring continuous compliance with regulatory requirements. One such tool is the Compliance Checklist, a tool that can enhance on-site compliance, yet minimize COGCC involvement.

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

The draft rule creates a new tool -- the Compliance Checklist -- which offers the following benefits:

- Assists both the operator and the COGCC in assuring compliance with new ongoing regulatory requirements by ensuring operators are aware of applicable regulatory requirements and to remind them of the ongoing obligation to ensure continuing compliance with the regulatory requirements, which will prevent or mitigate any damage or adverse impact to the public health or welfare caused by non-compliance.
- Provides that this new tool is to be used exclusively within the Piceance Basin, the area where there currently is the most extensive new oil and gas development, which potentially will result in fewer instances of non-compliance.
- Creates an affirmative obligation to answer the questions posed, thereby creating an incentive to peruse the question asked, and accurately complete the Checklist, which will inure to the benefit of the public and operators alike, by reducing the instances of non-compliance.

The Compliance Checklist represents a simple and valuable public health, safety and welfare protection tool, with the operator being in the best position to avoid problems or to detect problems early and to address them in an effective and efficient way. Perhaps of greatest importance, early detection of compliance issues, along with the appropriate action to bring the facility into compliance, can prevent or mitigate any damage or any adverse impact to the public health or welfare caused by the non-compliance.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

The proposed regulation will require all oil and gas operators in the Piceance Basin to complete and retain a Compliance Checklist. This action will not result in increased costs, however, since operators have consistently conveyed that they already conduct regulator inspections of their facilities to ensure compliance. There will be no training

costs, since the checklist questions are designed to be answerable by an informed on-site representative of the operator. The checklists will not need to be filed, they simply need to be updated annually and retained. Retention of the Checklist may result in minor costs for a secure, weather-proof box to be placed on site so that the Checklist can be produced upon request by an inspector, however we expect this cost to be minimal. This rule is thus expected to have minimal impact on economic competitiveness, job creation, or state revenues.

There will be no additional costs incurred by government because of implementation of this regulation, since the Compliance Checklists will not have to be submitted to COGCC. In fact, this proposed rule may actually reduce government costs by enhancing compliance and reducing the need for enforcement activity.

- 4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

The proposed rule is not likely to cause any adverse effects upon small businesses, consumers, or private markets. Though the proposed rule applies to operators with facilities in the Piceance Basin, we do not believe that it will result in adverse effects on the region. This is the area of Colorado in which oil and gas development rates are presently the highest, and we concluded that the benefits of requiring operators there to maintain Compliance Checklists outweighed any potential costs or adverse effects of doing so, particularly in view of recent compliance concerns capturing the attention of the public, CDPHE and COGCC. The rule is therefore not expected to have more than a minimal impact on small businesses, consumers, or private markets

- 5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

We considered several alternatives, including taking no action, requiring operators statewide to prepare Compliance Checklists, and requiring operators to certify compliance with all provisions of the COGCC rules. Taking no action could result in more incidents of non-compliance with COGCC rules, thus increasing the risk of environmental contamination and public health, safety, and welfare impacts from oil and gas operations in the Piceance Basin. Without this important tool, operators are less likely to detect ongoing compliance problems and address them early and before public health, welfare or environmental problems become significant and before complaints are registered by the public or others. For these reasons, we declined to select the no action alternative. We also considered requiring operators statewide to prepare Compliance Checklists, but we declined to do so primarily because of high rate and volume of natural gas development in the Piceance Basin has resulted in greater risk of non-compliance.

Finally, we declined to require operators to certify compliance with all provisions of the COGCC rules, because we felt that it would be more likely to achieve the desired results to focus an operator's attention on particular rule provisions, the non-compliance with which has the potential to cause detrimental impacts to public health and the environment.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 210.d. (new) TANK LABELING

1) *Please provide*

- a) *a description of the proposed rule;*
- b) *a description of the motivation for the proposed rule and*
- c) *a reference to the statute(s) providing authority for the proposed rule*

The proposed rule is a new rule that specifies labeling requirements for all oil field tanks.

Oil and gas operations produce large volumes of flammable liquids that may contain toxic substances; for example, benzene. Production activities may also result in large volumes of water that can contain crude oil and condensate. These produced fluids are stored at various production and transportation locations, including at tank batteries, at compressor stations, and near wellhead equipment. Field inspections suggest that these tanks are frequently not marked to indicate contents, quantity, operator name, and/or emergency telephone number. Investigations into spills and releases may also be ineffective and pose a risk to response personnel if personnel are not aware of the types of materials that may have been involved in an incident.

Authority for this proposed rule is included in C.R.S. §34-60-105, §34-60-160(2)(d), §34-60-106(11) and §34-60-128.

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule and*
- b) *an assessment of the benefits expected to accrue to those parties.*

Beneficiaries of the proposed rule include oil and gas facility operations personnel, emergency response personnel, and members of local communities.

The benefits of the proposed rule include (i) improved safety conditions for oil and gas operations personnel, emergency response personnel and members of local communities who would have access to additional information necessary for a safer and more effective emergency response, and (ii) improved protection of environmental quality for currently related businesses and consumers of natural-amenities-related activities who benefit from environmental protection, insofar as emergency responders would have information necessary for a more effective environmental protection.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to agencies for implementation and enforcement and anticipated effect on state revenues.*

Parties expected to incur costs as a consequence of the subject rule include oil and gas producers who have not yet labeled their tanks.

The cost of the proposed rule includes the cost of materials necessary for labeling and the labor expenses necessary to paint, stencil, or mark tanks or place signs near tanks to include the prescribed information. Direct costs to oil and gas producers are not expected to exceed \$500 per location. This rule is thus expected to have minimal impact on economic competitiveness, job creation, or state revenues.

Regulatory agencies will incur minimal expenses to implement and enforce this rule. Expected costs include the cost to modify Field Inspection Form to include a field to verify appropriate tank labeling and field inspection time to review this additional site requirement.

- 4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions.*

The proposed rule does not create adverse effect for small business, consumers, or private markets, and the requirements are the same for all oil and gas operators regardless of geographic region.

- 5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule.*

The proposed rule provides prescriptive regulatory language that is designed to protect public health safety and the environment. The cost of no action is the potential for serious injuries to emergency response personnel and adverse impacts to public health, safety and welfare.

Another approach considered was for oil and gas operators to submit a Spill Prevention Control and Countermeasures Plan (SPCC) for each facility to the COGCC and local emergency response management office. The SPCC plan, a federal requirement for facilities that store over 1,320 gallons of oil, contains a site diagram that describes where the oil is stored. However, this approach was dropped because it would be less effective in protecting public health safety and welfare and would create an administrative burden for the oil and gas community, the local emergency response facilities and the COGCC.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 216 (new) - COMPREHENSIVE DRILLING PLANS

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)]*
and
- c) *a reference to the statute(s) providing authority for the proposed rule.*

Rule 216 provides a procedure for initiation and acceptance of Comprehensive Drilling Plans. A Comprehensive Drilling Plan is intended to identify foreseeable oil and gas activities in a defined geographic area, facilitate discussions about potential impacts, and identify measures to minimize adverse impacts from such activities. A Comprehensive Drilling Plan will cover more than one proposed oil and gas location within a geologic basin, but its scope may otherwise be customized to address specific issues in particular areas. Although operators are encouraged to develop joint Plans covering the proposed activities of multiple operators where appropriate, Comprehensive Drilling Plans will typically cover the activities of one operator. A Comprehensive Drilling Plan will be optional and operator-initiated, allowing the operator to consult with state and local officials to identify potential impacts and develop mitigation measures that would be presumptively included in approvals for drilling permits in the covered area.

Rule 216 was intended to allow the COGCC to work with operators to identify foreseeable oil and gas activities in a defined area, facilitate discussions between the operator and officials from COGCC, CDPHE, and CDOW on potential impacts from these activities on public health, safety, welfare, the environment, and wildlife resources, and identify measures that can avoid, minimize, or mitigate these potential impacts that could then be presumptively included in approvals of drilling permits in the area.

The statutory authority for Rule 216 includes sections 34-60-106(11)(a) and 34-60-128(3)(d)(ii), C.R.S. These recent statutory additions direct the COGCC to promulgate new rules to protect public health, safety, and welfare in the conduct of oil and gas operations and to minimize adverse impacts to wildlife resources from such operations. The latter provision further directs that these rules should encourage operators to utilize Comprehensive Drilling Plans to provide for orderly development of oil and gas fields.

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*

b) an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]

Rule 216 is expected to benefit the general public, recreational users, state and local agencies, and oil and gas operators.

The general public will benefit from the protection of wildlife resources, which are held in trust by the State of Colorado, Division of Wildlife for the use of all people. Recreational users who desire to see wildlife while recreating will also benefit from measures that minimize adverse impacts to wildlife resources. State and local agencies who seek to minimize impacts to public health, safety, welfare, the environment, and wildlife resources will benefit through identifying potential impacts and developing presumptive measures to address them up front, before those impacts occur. Finally, oil and gas operators will benefit by engaging in advance planning of oil and gas facilities in ways that will minimize potential impacts to public health, safety, welfare, the environment, and wildlife resources, which will expedite decisions on drilling permits in areas covered by accepted Comprehensive Drilling Plans because impacts are identified and presumptive agreements are reached before well permit applications are submitted.

Without Rule 216, operators may be less likely to engage in planning on a broader geographic scale, less likely to identify cumulative impacts in advance, and less likely to develop presumptive measures to minimize those impacts. In the absence of Rule 216, operators would not be able to enjoy expedited decisions on individual well permits in areas where it is able to predict development activities on a broader geographic scale.

The concept of Comprehensive Drilling Plans was supported by numerous participants in the rulemaking process, including Mesa County, Moffat County, San Miguel County, Garfield County, Pitkin County, the Colorado Wildlife Federation, National Wildlife Federation, Colorado Mule Deer Association, Colorado Environmental Coalition, Western Colorado Congress, Oil and Gas Accountability Project, and The Nature Conservancy.

3) *Please provide*

- a) a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

Rule 216 is not expected to impose any direct costs or additional requirements on operators or small businesses. Because Comprehensive Drilling Plans are optional, develop of a Comprehensive Drilling Plan will be initiated at an operator's sole discretion. An operator will only choose to prepare a Comprehensive Drilling Plan and

engage in the procedures and consultations called for in Rule 216 when it determines that the benefits of electing to do so outweigh the costs of declining to do so.

Rule 216 will not impose substantial new costs on the government. When reviewing and/or accepting a Comprehensive Drilling Plan, government employees will be performing tasks and spending time that they would otherwise be performing or spending on a well-by-well basis. By identifying presumptive measures that would be applied to multiple wells covered by an accepted Comprehensive Drilling Plan, government time will be minimized by reducing the need to evaluate these issues repeatedly on a well-by-well basis. We estimate that putting in place procedures to track the boundaries of accepted Comprehensive Drilling Plans on maps maintained by the COGCC will result in a one-time cost of approximately \$15,000. Once these procedures are in place, we estimate that the costs of performing these tasks will be approximately 10-15% of this amount.

This rule is expected to have minimal impact on economic competitiveness, job creation, and state revenues.

- 4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

Again, because Comprehensive Drilling Plans are optional, an operator will choose to prepare a Comprehensive Drilling Plan and engage in the procedures and consultations called for in Rule 216 only when it determines that the benefits of doing so outweigh the costs of declining to do so. The proposed regulation does not impose any direct requirements on other entities or small businesses.

The proposed regulation is not expected to cause any adverse effects on consumers or private markets. It will be a planning and expediting tool that is available to operators statewide, so it will not have adverse effects on any particular geographic region.

- 5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

We considered various actions, including taking no action, making Comprehensive Drilling Plans mandatory, and incorporating approvals for individual wells within the context of a Comprehensive Drilling Plan.

We did not select the no action alternative for several reasons. First, we felt that without Rule 216, operators would be less likely to engage in planning on a broader geographic scale, less likely to identify cumulative impacts in advance, and less likely to develop

presumptive measures to minimize those impacts. In the absence of Rule 216, operators would not be able to enjoy expedited decisions on individual well permits in areas where it is able to predict activities on a broader geographic scale. Also, we felt that failing to include provisions such as those in Rule 216 would ignore the legislative direction contained in C.R.S. § 34-60-128(3)(d)(II).

We did not elect to make Comprehensive Drilling Plans mandatory because stakeholder and public input led us to conclude that doing so would not be feasible or desirable in some areas of the state.

Finally, we did not elect to make individual well permits approvals part of a Comprehensive Drilling Plan because the site-specific data on engineering issues and surface impacts is generally not available when planning activities on a broader geographic drainage-basin basis.

This and other measures were discussed with various stakeholders, including several small businesses.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 303 (amended) - FORM 2A, OIL AND GAS LOCATION ASSESSMENT

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)]*
and
- c) *a reference to the statute(s) providing authority for the proposed rule.*

The statutory authority for the revisions to Rule 303 include sections 34-60-106(11)(a) and 34-60-128(3)(d)(ii), C.R.S. These recent statutory additions direct the OGCC to promulgate new rules to protect public health, safety, and welfare in the conduct of oil and gas operations and to minimize adverse impacts to wildlife resources from such operations. In addition, the General Assembly recently declared it to be in the public interest to promote the responsible, balanced development of oil and gas resources in a manner consistent with protection of the public health, safety, and welfare, including protection of the environment and wildlife resources. *Id.* at 34-60-102(1)(a)(I).

To better evaluate the potential impacts to the public health, safety, and welfare, including the environment and wildlife resources, from oil and gas activities, additional information about these activities will be required. The OGCC elected to expand the information to be submitted with a Form 2A, currently required for all oil and gas activities. Data added and attached to the Form 2A will result in the accumulation of data that will allow the OGCC to calculate the specific size of land disturbed by oil and gas operations in Colorado. Except in limited circumstances described below, the expanded Form 2A will be an informational submittal that does not require approval. Where the proposed development is to occur in the Piceance Basin and where consultation on the proposed oil and gas location is to occur with the Department of Public Health and Environment or Division of Wildlife, the Form 2A will require the approval of the OGCC. Additionally, the proposed regulation will assist OGCC in assessing the effectiveness of reclamation of oil and gas sites, pursuant to direction in section 34-60-128(3)(d), C.R.S.

Finally, the General Assembly directed the OGCC to develop a "timely and efficient procedure" by which health and wildlife officials may participate in OGCC permitting decision. *Id.* at 34-60-106(11)(a)(I)(A), 128(3)(a). The proposed regulation does this by (a) providing an administrative forum for consultation, and (b) providing that that even when approval is required, it should take less than the 65 days currently required for approval of drilling permits and additionally providing that when action on a permit application is not taken within 75 days of a determination that an application is complete, the operator may obtain a prompt hearing from the Commission.

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

The general public, local communities, landowners, and adjacent property owners will benefit from the proposed revisions to Rule 303. The proposed revisions to Rule 303 and the Form 2A would enable the OGCC to obtain the information necessary to effectively address surface impacts of oil and gas activities. This would provide information to allow regulatory authorities to assess and respond to public concerns. Such complaints of potential impacts led to the passage of legislation to which the COGCC is responding. In addition, the proposed revisions provide the OGCC with an administrative mechanism necessary to impose conditions of approval on permits for drilling activity permits has the potential for significant negative surface impacts. Finally, the proposed revision provides the OGCC with a venue to conduct effective consultation with health and wildlife officials to identify and minimize adverse impacts to public health, safety, and welfare, including the environment and wildlife resources, as mandated by the General Assembly. This venue would address the source of the complaints, to the benefit of the general public, local communities, landowners, and adjacent property owners.

The concept of expanding an existing form as part of providing information on a drilling permit was supported by the Colorado Oil and Gas Association, Weld County, Anadarko Petroleum Corporation, Bill Barrett Corporation, Garfield County, Mesa County, The Nature Conservancy, Colorado Wildlife Federation, Colorado Mule Deer Association, Oil and Gas Accountability Project, and Western Colorado Congress.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

Operators will be required to submit some new information as part of a drilling permit application, although some of the information is already required under existing rules and some of the information requirements will not apply to all locations. For example, operators are currently required to submit information on visible improvements and surface uses near locations, and this information has been moved from the Form 2 to the Form 2A. Likewise, operators are already required to submit a topographical map of a three mile radius around the proposed well. New information requirements include an

equipment list, designation of land use or photographs of a reference area, a description of the soil map unit, and a wellbore trajectory for multi-well pads. Development of much of this information occurs as a matter of course already, and the proposed revisions only require it to be submitted to the OGCC. Moreover, if the location is to occur on slopes steeper than 10%, operators are to construct layout drawings and a cross-section plot; where the location is not on such slopes, this information will not be required. Development of this information should not be onerous and is necessary to minimize adverse impacts. Finally, the operator is to describe any proposed actions to minimize adverse impacts and any presumptive conditions of approval where the location is covered by an accepted Comprehensive Drilling Plan -- both matters that are entirely within the control and developed at the discretion of the operator. This rule is thus expected to have minimal impact on economic competitiveness, job creation, or state revenues.

Because the expanded Form 2A will require operators to submit more information than is currently required, additional government time will be needed to review permit applications for completeness. It is estimated that this additional time will be minimal; in fact, proposed changes to Rule 303 provide that the time for the OGCC to conduct completeness reviews is to be reduced from 30 days to 10 days in most circumstances, and 3 days where the location is part of an accepted Comprehensive Drilling Plan. The expanded Form 2A will also require additional government time to review for identification of adverse impacts and development of measures to minimize them.

The COGCC estimates that it will take staff an additional 3.76 hours to process each expanded Form 2A. Based on the number of drilling permits processed in 2007 and the average hourly salary of the staff members involved in administrative tasks, permitting, and environmental review, COGCC staff estimates that the annual cost of this additional time is approximately \$389,000. The COGCC is adding additional staff to review APDs and Form 2A, so these costs have been taken into consideration and the agency would be reviewing these issues anyway. In addition, the COGCC estimates that setting up the information technology to update databases, develop timing clocks, and develop website provisions for the expanded Form 2A would result in a one-time cost of approximately \$70,000. Annual IT costs to the COGCC to maintain these provisions would likely be 10-15% of this amount.

- 4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

All companies proposing to construct a new oil and gas location in Colorado, except gathering lines, will be required to comply with the provisions of revised Rule 303. The proposed regulation calls for Form 2A to be information submittals in most circumstances, although it applies differently to different operators in two cases. First, it requires OGCC approval of Form 2As for proposed locations in the Piceance Basin. Fast-growing oil and gas development in this area has resulted in more conflicts between

the development and members of the public than elsewhere, and so the OGCC elected to make Form 2A there subject to approval. This will allow the OGCC to review the potential location and impose conditions of approval where necessary to minimize adverse impacts to public health, safety, and welfare, including the environment and wildlife resources. Second, it requires OGCC approval where the proposed location requires consultation with the Department of Public Health and Environment or Division of Wildlife, which will occur when the operator seeks a variance from an identified rule intended to protect public health, safety, or welfare, including the environment and wildlife resources, where an operator seeks a well density increase, or where requested by the local government. Requiring OGCC approval is necessary in these circumstances in order to provide for an effective, timely, and efficient procedure for these agencies to participate in OGCC permitting, as required by the General Assembly.

The proposed revisions to Rule 303 should impose limited burdens on small business owners. We estimate that compiling the additional information being proposed for a Form 2A submittal should result in costs not exceeding \$5,000 per location, which can cover multiple oil and gas wells and associated production infrastructure. The rule is therefore not expected to have significant adverse impacts on small businesses, consumers, or private markets.

- 5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

We considered various options, including taking no action, requiring substantially more information as part of a new Form 34, and making approval of a Form 2A necessary for all new oil and gas locations in the state.

We did not select the no action alternative because doing so would not comply with legislative direction and would not result in several benefits. First, without the revisions to Rule 303, the OGCC would not obtain the information necessary to address surface impacts of oil and gas activities effectively. In addition, without the proposed revisions the OGCC would not have an administrative mechanism necessary to actually impose conditions of approval on drilling permits for the minimization of surface impacts. Finally, the OGCC would lack the venue to conduct effective consultation with health and wildlife officials to identify and minimize adverse impacts to public health, safety, and welfare, including the environment and wildlife resources, as mandated by the General Assembly.

Stakeholders and members of the public urged the OGCC not to require substantially more information in a new Form 34, and the OGCC thus declined to include that in the proposed regulation.

Finally, because the impact of oil and gas operations and the ability to address or mitigate differs in different portions of the state, the OGCC declined to require approval of Form 2As statewide. Because fast-growing oil and gas development in the counties of the Piceance Basin has resulted in more conflicts than elsewhere, the OGCC elected to make approval of Form 2As there required. This and other measures were discussed with various stakeholders, including several small businesses.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 305 (amended) - NOTICES OF OIL AND GAS OPERATIONS

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)] and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

To effectively address environmental, health, and wildlife issues requires that notice be provided to state health and wildlife agencies as well as members of the public, including adjacent landowners. Under proposed revisions to Rule 305, permit applications will be posted on the internet for a 30 day public comment period, and health and wildlife agencies and local government officials will be electronically notified of the application. This will provide these parties with the opportunity to participate effectively in permitting decisions, pursuant to direction contained in sections 34-60-106(11)(a)(II), 34-60-128(3)(a), C.R.S. In addition to providing a copy of a permit application to surface owners, the proposed revisions will require the operator to provide a copy to owners of land that is adjacent to and within 500 feet of a proposed location. This will allow those who might experience the adverse impacts of oil and gas activities to comment to the OGCC on permit applications.

The Colorado Oil and Gas Conservation Act requires an operator to provide notice to the surface owner and a registered local government in whose jurisdiction the well is located. C.R.S. 34-60-106(14). The General Assembly recently enacted statutory changes that expanded who is to be involved and the issues and values to be considered in oil and gas permitting decisions. C.R.S. 34-60-102(1)(a)(I), 34-60-128(3)(d)(I).

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

The general public will benefit from the proposed rule in two ways. First, the proposed revisions to Rule 305 will provide information and notification to the public about oil and gas activities in the State of Colorado, and it will allow the public to provide comment on oil and gas activities. Second, the proposed revision will allow for efficient notification of local government designees and health and wildlife officials on proposed oil and gas locations, and it will allow these agencies to provide comment and lend their

expertise to permitting decisions. Landowners will also benefit from the proposed revision, because the revised Rule 305 will allow those most likely to be impacted by oil and gas activities -- the surface owner and the owners of land adjacent to and within 500 feet of a proposed location -- with individual notice and an opportunity to comment.

Expanded notice and comment provisions were supported by Mesa County, Oil and Gas Accountability Project, Colorado Association of Home Builders, Colorado Wildlife Federation, National Wildlife Federation, Colorado Mule Deer Association, and Western Colorado Congress.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

Operators are currently required to provide a copy of a Form 2 and Form 2A to the surface owner and local government designee. The proposed revisions to Rule 303 would eliminate the requirement that operators provide copies of these forms to the local government designee -- the local government will instead be given electronic notification by the COGCC. The proposed revisions to Rule 305 would require operators to make additional copies of a Form 2A and attachments and send these documents to owners of land that is adjacent to and within 500 feet of a proposed location. Operators would also need to check local tax records to identify such property owners. Where there are no qualifying property owners, the proposed revisions would impose no additional requirements on operators. The cost to an operator of complying with this requirement is expected to be minimal, not exceeding \$50 in the vast majority of cases. It should be noted that a Form 2A can cover multiple oil and gas wells and associated production infrastructure.

We estimate that providing electronic notification to the local government designee, CDPHE, and CDOW will cost approximately \$5,000, and providing opportunities for the public to submit e-form comments would cost approximately \$65,000. Once procedures are in place for posting of Form 2A applications on the OGCC website, accepting electronic comment, and for electronically notifying health and wildlife officials, government costs from the proposed revisions to Rule 305 should be approximately 10-15% of these amounts.

This rule is not expected to affect economic competitiveness, job creation, or state revenues.

- 4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

The proposed revisions are not expected to cause any adverse effects on small businesses, consumers, private markets, or particular geographic regions. The provisions of the proposed revisions that call for notification of state health and wildlife officials and local governments will not affect operators. Operators are currently required to provide a copy of a Form 2 and Form 2A to the surface owner. The proposed revisions to Rule 305 would require operators statewide to make additional copies of a Form 2A and attachments and send these documents to owners of land that is adjacent to and within 500 feet of a proposed location. Where there are no qualifying property owners, the proposed revisions would impose no additional requirements on small business owners. The Form 2A covers multiple oil and gas wells and associated production infrastructure in many cases, such as where an operator proposes a multi-well pad. The rule is therefore not expected to have more than a minimal impact on small businesses, consumers, or private markets.

- 5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

We considered various actions, including taking no action, requiring operators to notify health and wildlife officials, and making permit applications subject to longer or shorter periods of public comment. We declined to adopt the no action alternative because failing to take the proposed action would result in less-informed permitting decisions. Currently, health and wildlife officials are not able to provide input and information about oil and gas activities. Likewise, the public and adjacent landowners are often not aware of permit applications until after they have been approved, and they are thus unable to offer information that may be unknown to the OGCC.

We declined to require operators to notify health and wildlife officials because we determined that it was equally effective and more efficient to provide for OGCC to electronically notify these agencies that an application has been posted. We opted for a 30 day public comment period instead of longer or shorter periods because this is an adequate time to review information and provide comment, and it is also the length of time commonly provided by other federal or state agencies for public comment. This and other measures were discussed with various stakeholders, including several small businesses.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 306 (amended) - CONSULTATION

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)]
and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

Under proposed revisions to Rule 306, a consultation of up to 40 days will occur with state health and wildlife agencies in certain circumstances. This will provide these agencies with the opportunity to participate effectively in permitting decisions, pursuant to direction contained in legislation. The proposed revisions will also codify the existing OGCC On-Site Inspection Policy. While this is a change in OGCC rules, it is not a change in the requirements applicable to operators who do not have a surface use agreement for a proposed oil and gas location.

The General Assembly expanded who is to be involved and the issues and values to be considered in oil and gas permitting decisions. C.R.S. 34-60--102(1)(a)(I), 34-60-128. Specifically, C.R.S. 34-60-128(3)(a) calls for “a timely and efficient procedure for consultation with the wildlife commission and division of wildlife on decision-making that impacts wildlife resources,” and C.R.S. 34-60-106(11)(a)(II) directs the OGCC to adopt rules that “provide a timely and efficient procedure in which the [Department of Public Health and Environment] has an opportunity to provide comments” on OGCC decisions. The proposed changes to Rule 306 are in direct response to these directions and are intended to implement them.

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

The public will benefit from the proposed changes to Rule 306 because state health and wildlife officials will have the opportunity to work with operators to identify potential adverse impacts from proposed oil and gas activities and to work with the COGCC to develop measures to avoid, minimize, or mitigate these impacts. The public will also benefit because the participation of health and wildlife officials will be limited to situations where it is necessary to protect public health, safety, and welfare, including protection of the environment and wildlife resources, by identifying particular situations (e.g. an operator’s request for well density increase or where the local government

designee requests CDPHE consultation) or particular rules, the waiver of which will require consultation to occur (i.e. rules intended to minimize adverse impacts to wildlife resources or rules intended to protect public health, safety, or welfare). Finally, the public will benefit because OGCC decisions will be informed by the expertise present within the health and wildlife agencies. This will result in benefits to public resources such as protection of water quality, reduction in odors, minimization of impacts to wildlife resources, resulting in better decisions for and impacts accruing to citizens of the State of Colorado.

The following entities supported the consultation provisions reflected in the proposed revisions to Rule 306: Garfield County, Delta County, Rocky Mountain Clean Air Action, Oil and Gas Accountability Project, Colorado Wildlife Federation, National Wildlife Federation, Colorado Mule Deer Association, The Nature Conservancy, Colorado Bowhunters Association, and Citizens for San Luis Valley Water Protection Coalition.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

Because the proposed changes to Rule 306.a (consultation with surface owner) are existing OGCC policy, adoption of the proposed provision will not change the costs to any parties, operators, or government.

We estimate that the consultation called for in the revisions to Rule 306.c and .d will require conversations, in most instances, that last no more than a day or two. This will not result in measurable increases in the costs of doing business for operators because most consultations will be voluntary, i.e. for variance purposes, and thus would not be undertaken if the costs are not outweighed by the benefits of doing so.

As for government costs where consultation is to occur, the proposals for consultation with the Division of Wildlife and Department of Public Health and Environment will require these agencies to participate in decision-making as to drilling permits, in certain circumstances, which is a new requirement called for in HBs 1298 and 1341. We anticipate that consultation will occur most often in the context of an operator's request for a variance from some provision in the rules, though it may also occur with the CDPHE as a result of a local government's request. Under existing rules, variances are granted under Rule 502.b; proposed revisions to Rule 306 modify the variance rule, bringing health and wildlife officials into the decision-making for such variance requests. This will increase government costs by involving additional individuals within

these other agencies, although the extent of this increase cannot be known. It is difficult to estimate the number of variance requests operators will submit that trigger consultation. It is likewise difficult to estimate the number of permit applications for which a local government will request that the CDPHE consult.

Nonetheless, one way to arrive at potential governmental costs is to estimate that it is reasonable to expect the CDOW and the CDPHE to each add between 1 and 3 new employees to implement the proposed changes to Rule 306. This would result in costs of between \$100,000 and \$300,000 for each of these agencies. A more conservative cost value may be developed by estimating that it will take 1-3 days of staff time for each of these agencies to conduct consultations. At a total estimated total salary cost for these individuals of \$370 per day, a consultation of two days would cost \$740 -- plus \$100 in additional costs in travel to the site, if necessary. If one conservatively estimates that 1000 consultations will take place annually, the above daily estimates would yield an annual total of \$840,000. Again, this is a conservative estimate based on reasonable assumptions, which is all that is available at this time.

Finally, it should be noted that Rule 306 is crafted to require consultation with these agencies in limited circumstances, on issues that are within the agencies' particular expertise. Moreover, cost savings to the government could reasonably be anticipated to accrue by involving individuals with expertise in environmental, health, and wildlife issues from the consulting agencies, rather than requiring OGCC staff with expertise in other matters to become conversant in these issues.

The proposed rule amendment is expected to have a minimal impact on economic competitiveness, job creation, and state revenues.

4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

All regulated entities that seek a variance from an enumerated rule, apply for a well density increase pursuant to Rule 508, or whose drill-permit application results in a local government request that state health officials consult would be required to participate, to some degree, in consultation under Rule 306. This requirement would apply statewide, thus it would not result in adverse effects in any particular geographic region.

In most circumstances (variance, Rule 508 well density increase), whether consultation would occur would be entirely within an operator's control, and the operator will presumably only choose to initiate this process when it has determined that the costs of doing so are outweighed by the benefits. As a result, the amended rule is expected to have a minimal impact on small businesses.

Again, variances are granted under existing rules pursuant to Rule 502.b. The proposed revisions to Rule 306 simply modify the variance rule, bringing health and wildlife

officials into the decision-making for such variance requests. It would therefore not, on its face, result in adverse effects on operators or small businesses. The proposed rule amendment is expected to result in a minimal impact on consumers and private markets.

- 5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

We considered a variety of options, including taking no action, requiring consultation for all oil and gas activities in certain areas of the state, and requiring consultation only on geographic-scale oil and gas decisions.

We did not select the no action alternative because the General Assembly determined that the involvement of health and wildlife officials was necessary to ensure that oil and gas permitting decisions were undertaken in a way that protects public health, safety, and welfare, including protection of the environment and wildlife resources. Failure to adopt the proposed revisions to the OGCC regulations would thus be in violation of legislative direction, and it would result in decisions that might not be sufficiently protective of the resources of the state.

We declined to require consultation for all oil and gas activities in some areas of the state because we determined that to do so would impose undue burdens on industry and government officials alike. We believe that that the proposed regulatory requirements will adequately protect the environment and wildlife and so the costs would outweigh benefits. Finally, we declined to require consultation only on geographic scale planning decisions because the information to meaningfully protect public health, safety, welfare, the environment, and wildlife resources is often not fully developed when faced with geographic scale decisions. We determined that the more effective route was to identify a limited set of circumstances where consultation would occur on a permit-specific basis. This and other measures were discussed with various stakeholders, including several small businesses.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 313A (new) - GAS FACILITY
REGISTRATION/CHANGE OF OPERATOR

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)]
and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

Proposed Rule 313A sets forth requirements for operators of gas processing facilities, gas gathering systems and natural gas storage facilities.

The current 300 Series rules include requirements for many of the COGCC forms but does not include Form 12 – Gas Facility Registration / Change of Operator. The proposed rule clarifies the current requirement for gas facility registration as described in Appendix I of the COGCC Rules and Regulations. However, it refers to Rule 711 which is the financial assurance requirements for Natural Gas Gathering, Natural Gas Processing and Underground Natural Gas Storage Facilities. There is no reference to Form 12 in Rule 711. As a result, staff believes that there may be a large number of gas compressor stations and/or gathering systems that are not registered. Although the facility may not be directly permitted by the COGCC, E&P waste spill/releases or remediations at such a facility would be regulated by the COGCC.

The statutory authority for this new rule is C.R.S. § 34-60-105.

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

There are currently over 100 remediation projects in the COGCC database involving gas plants, gas compressor stations or drip stations on gas gathering systems. Approx. 80 of these remediation projects are gas plants or compressor stations, many of which have significant ground water impacts. Information on the location of these facilities will benefit local communities, the general public, emergency responders, and regulatory agencies. Registration of these facilities will enable better protection of public health, safety and welfare by allowing communities and regulatory agencies to anticipate and mitigate future needs for remediation.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

Operators of gas processing facilities, gas gathering systems and natural gas storage facilities are expected to incur minimal costs as a consequence of this proposed rule. The regulating agency will also incur minimal costs.

COGCC - This would require data entry and processing at an estimated costs of approximately \$53 per site.

O&G Operator

Example: In the DJ Basin, DCP Midstream (DCP) operates seven (7) gas processing plants and thirteen (13) gas compressor stations with approx. 2,800 miles of gas gathering pipelines. This would require estimated costs of approx. \$150 per site or \$3,005 for twenty facilities.

This rule is expected to have minimal impact on the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and state revenues.

4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

This rule is expected to have minimal impact to small businesses, consumers, private markets, and particular geographic regions.

5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

Maintaining the status quo and not setting forth the requirements for Form 12s in proposed Rule 313A could result in continued non-compliance by some operators. It could also result in additional construction and installation of these types of facilities with no registration or financial assurance.

There is no alternative. The Form 12 is currently required but not adequately set forth in the current rules.

A voluntary standard would not implement the rule objective because the parties benefiting from the absence of standards and incurring the cost of the proposed standard would not have an incentive to employ a standard for which the benefits are expected to accrue to the public at large.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 317 (new) – Cement Bond Logs

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)] and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

The proposed Rule 317.o codifies the requirement to run cement bond logs on each well.

About two years ago, the OGCC staff began adding this requirement to conditions of approval for every drilling permit to ensure the protection of ground water by isolating producing zones and aquifers.

The statutory authority for this proposed rule is C.R.S. §34-60-106(2)(d).

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

The beneficiaries of the rule, which will result in improved efficiency of the OGCC staff, are the general public and the oil and gas industry.

The requirement for Cement Bond Logs (CBL) has been manually added to the conditions of approval for every drilling permit over the last two years, therefore, codifying this practice will eliminate that manual step and reduce the permit processing time. Public resources will be used more efficiently and drilling permits will be issued in a timelier manner.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

Oil and gas operators incur the cost of running cement bond logs.

The estimated cost to run a CBL is approximately \$10,000 per well. However, because staff is currently adding a condition of approval to all drilling permits requiring CBL's, we do not consider this rule to result in additional costs.

This rule is expected to have minimal impact on economic competitiveness, job creation, state revenues, or government costs.

- 4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

The rule applies to all geographic regions and all oil and gas operators, regardless of size. Small businesses have been required for the last two years to run a CBL via conditions of approval on drilling permits. This rule will not change the current practice or add costs. The rule is therefore not expected to have more than a minimal impact on small businesses, consumers, or private markets.

- 5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

The alternative approach is to do nothing and continue manually adding the requirement for a CBL. The most significant benefit, increased staff efficiency, justifies codifying the requirement to run a CBL.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 317B - PUBLIC WATER SYSTEM SOURCE WATER ASSESSMENT AREA PROTECTION

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)] and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

The proposed changes to the existing regulation respond to legislative mandates included in HB07-1341, which direct the Colorado Oil and Gas Conservation Commission (COGCC) to promulgate rules, in consultation with the Department of Public Health and Environment (CDPHE), to protect the health, safety and welfare of the general public in the conduct of oil and gas operations. C.R.S. § 34-60-106(11)(a)(II).

The proposed changes were designed specifically to prevent oil and gas operations from polluting classified surface water supply segments for a distance of five miles upstream of public water system intakes that supply drinking water to over 4,700,000 Coloradans, or about 85% of Colorado's total population. Specific changes include:

- A requirement that oil and gas operations be located a minimum distance of five hundred feet from a classified surface water supply segment for a distance of up to five miles upstream of a public water system intake in a source water assessment area.
- A requirement that oil and gas operations within a distance of ½ mile from a classified surface water supply segment for a distance of 5 miles upstream of a public water system intake in a source water assessment area shall implement certain performance standards. The performance standards include:
 - Pitless drilling systems or containment of all drilling waste with impervious liners;
 - Baseline, post drilling and one follow-up (3 months later) surface water data sampling and analysis (10 listed parameters, see Rule 317.B)); and
 - Development, maintenance and implementation of an emergency spill response program.
- An opportunity for an oil and gas operator to request a variance from these provisions if they can demonstrate that the proposed oil and gas operations and applicable performance standards will provide sufficient protection for the classified water supply segment for a distance of up to five (5) miles upstream of a public water supply system intake.

Depending on their location, potential contaminant releases from oil and gas operations may result in adverse effects on the use of surface water by public drinking water systems. The potential of such contamination increases as the density and frequency of oil and gas development activities occur in close proximity to public water system intakes or water supply springs or groundwater wells under the surface water in a source water assessment area. While such problems have not occurred commonly in Colorado to date, potential for problems has grown significantly with the growing rate and intensity of oil and gas development.

Safe drinking water is a critical and essential resource for the health, safety and welfare of the public. This priority requires additional efforts to ensure protection of the resource from the rapid increase in oil and gas development within a distance of five (5) miles upstream of a public water system intake in a source water assessment area. These proposed provisions reflect measures necessary to prevent degradation of classified surface water supply segments for a distance of five (5) miles upstream of a public water system intake.

Without these measures, public health risks could increase, as could socio-economic impacts. Depending on the population served by this water service and the extent of the impacts to water quality, the potential economic hardship to a public water system could be very costly. In addition, public drinking water resources are limited, essential resources for communities and life processes. They should be provided the highest level of protection.

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

The proposed rule will allow development of oil and gas resources while providing greater protection for public health, safety and welfare by requiring that oil and gas drilling activities are conducted a minimum protective distance away from the classified surface water supply segments for a distance of five (5) miles upstream of public water system intakes.

Requiring the use of exploration and production performance standards will mitigate associated impacts and minimize the potential for public drinking water supply contamination. The proposed rule also establishes a mechanism for monitoring the quality of surface water to ensure it meets healthy standards.

The proposed rule benefits public health, safety and welfare by establishing an emergency spill response and notification procedure, which can be included in other required emergency response plans, specifically designed to alert public drinking water systems in the event of an accidental contaminant release.

A more detailed discussion of these benefits follows:

Exclusion Zone: The exclusion zone distances are designed to minimize the impacts of contaminant releases in classified surface water supply segments for a distance of five (5) miles upstream of a public water system intake. In the event of an upset condition or contaminant release, these distances provide space and time for corrective actions to be implemented, and for public water systems to be notified of the event and take the necessary preventative actions.

The proposed five (5) mile upstream protection distance is consistent with C.R.S. §31-15-707, which allows municipal utilities to protect their waterworks from pollution sources five (5) miles above their intake. This authority has been exercised by over thirty-five (35) municipal governments across Colorado. Currently, non-municipal public water systems do not have the authority to adopt a watershed ordinance under this state statute. Both municipal and non-municipal public water providers should be provided similar basic drinking water supply protections. The five hundred (500) foot minimum distance is based on best professional judgment and conservative contaminant fate and transport mechanisms. A drilling permittee may request a site specific variance by providing weight of evidence documentation to the Commission that the classified surface water supply segment for a distance of five (5) miles upstream of a public water system intake will be protected if they are allowed to drill inside the minimum exclusion zones (500 foot buffer). In such cases, COGCC and CDPHE would be consulted on this permit variance request.

Performance Standards Zone: A requirement for performance standards concurrently provides operating flexibility and adequate protection for classified water supply segments for a distance of five (5) miles upstream of a public water system intake. While exclusion zones offer close proximity protection from potential contamination, performance standards zones allow oil and gas development to occur where appropriate contaminant prevention measures are taken to mitigate impacts when they are strictly followed. An oil and gas operator may request and be issued a site specific variance from these performance standards by providing weight of evidence documentation to the Commission that the classified surface water supply segment for a distance of five miles upstream of a public water system intake will be adequately protected. COGCC and CDPHE would be consulted on this permit variance request.

Once again, the five (5) mile upstream protection distance is consistent with C.R.S. §31-15-707 and the previous identified reasons. COGCC and CDPHE derived the one-half (1/2 mile) performance standard zone based on best professional judgment, conservative contaminant fate and transport protection, and consideration of other land management agency policies. Specifically, the United States Forest Service controlled surface use stipulations establish a one-quarter (1/4 mile) exclusion zone in some areas where no drilling may occur around developed surface water inlets and spring development in the watershed. COGCC and CDPHE considered this more

restrictive approach, but determined the combination of less restrictive exclusion zones combined with the performance standard approach in conjunction with monitoring, is a prudent, flexible and effective policy for protecting Colorado's classified surface water segments for a distance of five (5) miles upstream of a public water system intake.

Waste Management In Performance Standards Zone: The proposed rule also minimizes potential contaminant risks to classified surface water supply segments for a distance of five (5) miles upstream of a public water system intake by proposing that drilling waste be contained utilizing impervious liners or pitless drilling systems.

Monitoring: The proposed rule also requires that baseline surface water quality monitoring be performed in performance standard zones in order to determine whether water quality conditions change as a result of drilling activities and operations.

In summary, the proposed drilling exclusion and performance zones are proposed to protect the classified surface water supply segments for a distance of five (5) miles upstream of a public water system intake from potential contamination that may degrade water quality below state and federal standards for human consumption.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

The proposed regulation will require all oil and gas operators to locate facilities a minimum distance of 500 ft from a classified surface water supply segment for a distance of up to five miles upstream of a public water system intake in a source water assessment area. This requirement could result in an operator using directional drilling techniques for the additional 500 feet necessary to access the mineral resource.

COGCC solicited cost estimates earlier this year from the industry for these potential costs and received not information. Nonetheless, CDPHE and COGCC have made an effort to present some costs figures in the absence of those from industry.

Directional Drilling - The proposed regulation will require all oil and gas operators to locate facilities at least 500 ft from a classified surface water supply segment for a distance of up to five miles upstream of a public water system intake in a source water assessment area. This requirement could mean that an operator would need to employ directional drilling techniques for at least the additional 500 feet necessary to access the

mineral resource. Several factors contribute to a broad range of possible incremental directional drilling costs associated with an operator having to relocate a planned well site to comply with the 500 ft exclusion zone. These factors include topography, target zone depth, thickness of target formation, overburden (material to be drilled through), whether the well(s) are to be drilled from a multi-well pad, reach distances etc. Based on information provided to the COGCC by Kerr McGee for a DJ Basin 8-well pad, and assuming target zone depths of about 8,000 to 9,000 ft, the incremental directional drilling costs range from \$92,349 for a reach of 260 feet to \$295,791 for a reach of 3,347 feet. Incremental drilling costs for a reach of 575 feet were estimated to be \$98,174 (roughly 2% of the vertical well cost of \$4,947,000). These numbers do not reflect infrastructure savings attributable to placing all the wells on a single well pad.

The cost figures for the DJ Basin presented above are not necessarily representative of directional drilling costs throughout the state. For example, in the Piceance Basin, 98% of the wells are already directionally drilled due to tight gas sands. 90% are drilled from multiple well pads and the average well depth is about 8,500 feet (maximum is about 11,000 ft on the Roan Plateau and minimum is about 5,000 feet in Roan/Piceance Valleys). Based on this information, incremental drilling costs could actually be less than in the DJ, basin (or, in limited cases, more if topography prohibits a 500 foot move). However, it is reasonable to assume that most incremental directional drilling costs would be lower since typical directional drilling reaches in the Piceance Basin already range from 2,500 - 3,000 in the Piceance Valley to a maximum on the Roan Plateau of 4,700 feet, suggesting that an additional reach of at least 500 feet (required by these proposed rules) may not significantly affect overall operating costs. In any event, the incremental well development costs associated with a 500 ft mandatory reach for limited geographic are expected to be well less than 10% and closer to 2% of total costs, based on the information presented above.

Closed loop drilling and containment of all drilling waste with liners - Drilling waste liner cost estimates presented below include mobilization, delivery, installation and quality assurance/quality control inspections. Prices do not include compacted clay lining beneath the liner because we were unable to acquire such cost estimates. All prices can be reduced based on impoundment size and can often be reduced during negotiations between the supplier and operator, based on a number of factors, including individual job, repeat business, etc.

Costs for 24 mil high density polyethylene (HDPE) liners, used during production for drilling mud and recirculation pits, are estimated to be about \$0.75 per square foot. While costs for 60 mil HDPH liners used at centralized production pits, range from \$0.79 to \$1.20 per square foot, depending on size (the larger the pit, the smaller the cost per square foot).

Baseline, post construction and one follow-up surface water data sampling and analysis (10 listed parameters). Total estimated cost per permitted oil and gas facility operator subject to this provision is \$1,476 (see attached data sheet).

Development, maintenance and implementation of an emergency spill response program. This provision will not result in added cost to operators, since existing COGCC provisions, as well as other applicable federal and state rules require the development of such plans.

This rule is thus not expected to impact economic competitiveness, job creation, or state revenues.

There will be no measurable additional costs incurred by government because of implementation of this regulation. Minor costs associated with staff review of variance requests are expected, which likely would take up to 5 hours per variance request. Minor costs could also be incurred, in the event an enforcement action was necessary to ensure compliance with the proposed regulation. Existing enforcement programs will likely be able to absorb these additional incremental costs, with the effect on state revenues be limited to hourly billing amounts.

The COGCC attempted to develop estimates of the cost to develop information technology provisions to address tasks such as maintaining the Source Water Drinking Water Map, providing the Water Supply Area Applicability Determination Tool, and managing the baseline water quality samples. Because these requirements remain extremely conceptual in nature, these costs are difficult to estimate reliably. Nonetheless, based on our current understanding, the COGCC conservatively estimates that the cost of developing procedures for these tasks could amount to \$35,000, \$100,000, and \$150,000, respectively. Once these procedures are in place, the cost of maintaining them is expected to be approximately 10-15% of these amounts.

- 4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

While the proposed rule may result in some increment of additional cost to an operator due to the need to directionally drill to reach the resource beneath the exclusion zone, our research leads us to conclude that the cost of doing so is not significant when compared with the overall cost of drilling a well and the likely recovery. The proposed rule does not contain different requirements for different sized entities or different geographic regions. Small businesses, consumers, or private markets are not expected to be significantly affected by the proposed rule changes. Those few small businesses who are affected would presumably be able to absorb or pass additional costs onto their customers.

The rule is therefore not expected to have more than a minimal impact on small businesses, consumers, or private markets.

5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

We considered taking no action, designing the rule to add protections for ground, as well as surface water, and relying on market-based alternatives or voluntary efforts. Taking no action would result in a potential increased risk of contamination to classified surface water supply segments for a distance of five (5) miles upstream of a public water system intake and the consumers of public water systems. That risk would increase significantly due to increasing magnitude of oil and gas development within a distance of five (5) miles upstream of a public water system intake. We therefore did not select the no action alternative. We also determined that designing the proposed regulation to include additional protections for groundwater was not warranted because existing regulations, combined with other proposed COGCC regulation changes, will ensure groundwater is adequately protected. We also determined that there were not market-based alternatives or voluntary efforts that would achieve the protections in the proposed rules. Given the importance of water supply use, such alternatives or standards would not be consistently implemented and therefore would increase the risk of contamination in classified surface water supply segments for a distance of five (5) miles upstream of public water system intakes. These rules clarify requirements for oil and gas operations in a straight-forward and consistent manner.

COGCC Regulation Sampling Costs	
8 Hours @ \$65.00 x 3 sampling events	\$1,560.00
GRAND TOTAL SAMPLING COSTS	\$1,560.00
COGCC Regulation Analytical Costs	
a. pH;	\$15.00
b. alkalinity;	\$15.00
c. Specific conductance	\$15.00
d. Major cations/anions (chloride, fluoride, sulfate, sodium);	
Chloride	\$20.00
Flouride	\$15.00
Sulfate	\$20.00
Sodium	\$19.00
e. Total dissolved solids;	\$15.00
f. BETX/GRO/DRO;	
BTEX	\$100.00
GRO	\$65.00
DRO	\$85.00 *
g. TPH;	\$50.00 *
h. PAH's (including benzo(a)pyrene);	\$225.00
i. Nitrite/nitrate; and	\$30.00
j. Metals (arsenic, barium, calcium, chromium, iron, magnesium, selenium)	
Arsenic	\$19.00
Barium	\$19.00
Calcium	\$19.00
Chromium	\$19.00
Iron	\$19.00
Magnesium	\$19.00
Selenium	\$19.00
Total Analytical Costs per sample:	\$822.00
Number of Samples	3
GRAND TOTAL ANALYTICAL COSTS	\$2466.00
COGCC Regulation Shipping Costs	
Shipping cost per cooler	\$50.00
Number of coolers	3
GRAND TOTAL SHIPPING COSTS	\$150.00
TOTAL COGCC REGULATION COSTS	\$4,176.00
* Pricing from Evergreen Analytical	

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 341(new) - BRADENHEAD MONITORING DURING WELL STIMULATION OPERATIONS

1) *Please provide*

- a) *a description of the proposed rule;*
- b) *a description of the motivation for the proposed rule; and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

This rule seeks to protect against groundwater contamination by requiring operators to keep specific records regarding bradenhead pressures recorded during the stimulation process used to increase oil and gas production. This rule stems from a motivation to protect public health and safety and is responsive to concerned members of the public who have expressed concern to the COGCC that ground water could be contaminated without this type of regulatory requirement.

C.R.S. § 34-60-106(11) provides the COGCC the statutory authority to address public health & environment considerations in the rules.

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule; and*
- b) *an assessment of the benefits expected to accrue to those parties.*

Parties that benefit from the use of clean water supplies are prospective beneficiaries of this rule change. In addition to the general public being protected from possible water supply contamination, local agencies and major water providers who are responsible for local water quality will also benefit. The agricultural and ranching industries also stand to benefit.

Protected ground water results in accrued benefits ranging from a stable local economy able to provide a crucial resource to the elimination of health risks associated with ground water contamination to avoiding the immense costs that could be associated with a groundwater contamination problem. Benefits also include protecting a water supply currently used to irrigate land, providing water to livestock and other animals, and protecting property values.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule; and*

b) an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues.

It is possible that oil and gas producers who would not otherwise perform this test for routine well operating purposes could sustain a cost associated with this practice.

While operators may incur a cost associated with this rule change, such cost incurrence is unlikely because this rule seeks to codify a common practice. Additionally, costs traditionally associated with this type of record keeping practice are minimal, and any additional staff time needed to meet this new record keeping and reporting requirement should be minimal. No additional staffing should be necessary for the COGCC. Therefore, there is no significant impact expected on the regulated community, economic competitiveness, job creation, or state revenues or agencies.

4) Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions.

No adverse effects are currently anticipated from this proposed rule on small businesses, consumers, private markets, or particular geographic regions. At most there may be a negligible impact on sale, employment or tax revenue.

5) Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule.

The possible risk associated with ground water contamination outweighs the de-minimis costs associated with having to track and report the limited number of bradenhead pressures that are not already being recorded for other purposes. There were no market alternatives to meet this same objective and again, because of the problems associated with possible groundwater contamination, neither inaction nor a voluntary standard were viewed as providing adequate protection.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 501 (amended) - APPLICABILITY OF RULES OF PRACTICE AND PROCEDURE

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)] and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

The proposed amendments add headers to the rules for clarification, move the rule on judicial review from a previous rule later in the 500 Series, and modify the rule to include in the list of final agency actions that are ripe for judicial review approved Applications for Permits-to-Drill, Form 2, and Oil and Gas Location Assessments, Form 2A, for which a hearing has not been sought within 10 days of the Director's approval.

The purposes of the amendments are clarification, organization, and provision for the judicial appeal of proposed Oil and Gas Location Assessments, Form 2A. The amendments also conform the timing for judicial review of Applications for Permits-to-Drill, Form 2, to the proposed amendment of Rule 303.m.(1) (which makes Applications for Permits-to-Drill final agency action 10 days after issuance unless a hearing on such approval is requested).

The statutory authority for Rule 501 includes C.R.S. §§34-60-106(6), 34-60-108, and 34-60-111. These statutes provide the authority for the Commission to conduct hearings and to prescribe rules and regulations governing the practice and procedure before it and provide for judicial review of Commission rules, regulations and final orders pursuant to the Administrative Procedure Act (C.R.S. §24-4-106).

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

The parties expected to benefit from the amendments are the regulated entities, primarily oil and gas producers.

The amendments provide for ease of reference when reading the rule. They provide a remedy for review of the Director's decision related to Applications for Permits-to-Drill, Form 2, and Oil and Gas Location Assessments, Form 2A. They provide notification of

the ability for judicial review. Without the proposed amendments, Rule 501 would be somewhat more cumbersome to understand. The amendments generate information benefits.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

No parties are expected to incur costs as a consequence of the proposed amendments.

The proposed amendments are not expected to impose additional costs on the regulated entities or the OGCC. They are not expected to affect the state's economy, economic competitiveness, or job creation. The proposed amendments should not force the cessation of business by any existing businesses. It is estimated that there will be no monetary impact of the proposed amendments on state revenue.

4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

Because the proposed amendments generate informational benefits, they are unlikely to have any adverse effect on small businesses, consumers, private markets, or particular geographic regions. They do not impose any direct requirements on any business entities, regardless of size or location. The proposed amendments do not impose licensing, permit, or educational requirements and, therefore, do not create barriers to entry. They do not affect the availability of goods or services and, therefore, will not restrict consumer choice or private markets.

5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

Without the proposed amendments, Rule 501 would be somewhat more cumbersome to understand and inconsistent with other proposed amendments, specifically, to Rule 303.m.(1). There were no alternatives or voluntary standards relevant for consideration in place of these proposed amendments.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 502 (amended) - PROCEEDINGS NOT REQUIRING THE FILING OF AN APPLICATION

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)]
and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

Rule 502.b.(1) allows the Commission or the Director to grant variances to Commission rules, regulations or orders. The proposed amendment adds clarifying language and punctuation to reflect the Commission's and Director's interpretation that an applicant is required to make a showing that it has made a good faith effort to comply with any rule, regulation or order from which it seeks a variance.

Currently Rule 502.b.(1) requires an applicant for a variance to:

[M]ake a showing that it has made a good faith effort to comply, or is unable to comply with the specific requirements contained in these rules to secure a waiver or an exception, if any, and that the requested variance will not violate the basic intent of the Oil and Gas Conservation Act.

The Commission and Director have interpreted this provision to require an applicant to make a showing that it has made a good faith effort to comply with any rule, regulation or order from which the applicant seeks a variance (not just "rules to secure a waiver or exception"). The agency's interpretation is consistent with inserting a comma, which may have been inadvertently omitted, between the clauses, "to comply with the specific requirements contained in these rules" and "to secure a waiver or an exception, if any." It also comports with the first sentence of Rule 502.b.(1), which allows "variances to any Commission rules, regulations or orders."

The statutory authority for Rule 502 includes C.R.S. §§34-60-104.5, 34-60-105, 34-60-106(6), and 34-60-108. These statutes provide the authority for the Director to administer the provisions of the Act and enforce the rules, for the Commission to make and enforce rules, regulations, and orders pursuant to the Act, for the Commission to conduct hearings, and for the Commission to prescribe rules and regulations governing the practice and procedure before it.

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

The parties expected to benefit from the amendments are people and entities that may apply for a variance to a rule, regulation, or order of Commission or that may object to the granting of a variance including, for example, regulated entities, oil and gas producers, state and local agencies, local governmental designees, recreational consumers, emergency responders, members of the public, and mineral interest owners.

The amendments provide clarification of the agency's interpretation of the rule. They provide a standard for applicants seeking variances. They provide protesting parties with an understanding of the standard required before a variance is granted. Without the proposed amendments, Rule 502 would be less clear. Thus, the amendments generate information benefits by clarifying a uniform standard applicable to all variance requests.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

No parties are expected to incur costs as a consequence of the proposed amendments.

The proposed amendments are not expected to impose additional costs on the regulated entities or the OGCC because they articulate a standard that has been utilized by the agency without objection or protest. Thus, it appears that regulated entities have interpreted Rule 502.b.(1) the same way that the agency has.

Since the proposed amendments are unlikely to change current behavior of regulated entities or the OGCC, they are not expected to affect the state's economy, economic competitiveness, or job creation. The proposed amendments should not force the cessation of business by any existing businesses. It is estimated that there will be no monetary impact of the proposed amendments on state revenue.

- 4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

Because the proposed amendments generate informational benefits, they are unlikely to have any adverse effect on small businesses, consumers, private markets, or particular geographic regions. They do not impose any direct requirements on any business entities, regardless of size or location. The proposed amendments do not impose licensing, permit, or educational requirements and, therefore, do not create barriers to entry. They do not affect the availability of goods or services and, therefore, will not restrict consumer choice or private markets.

- 5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

Without the proposed amendments, Rule 502 would be less clear. There were no alternatives or voluntary standards relevant for consideration in place of these proposed amendments.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 503 (amended) - ALL OTHER PROCEEDINGS
COMMENCED BY FILING OF AN APPLICATION

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)]
and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

Rule 503 sets forth the requirements for filing an application for a hearing before the Commission. The proposed amendments clarify numbers of copies of applications required to be submitted, exempt state and local governments from paying docket fees (currently no fees are assessed to any parties), describe additional types of hearing applications and appropriate applicants, and include amended language to comport with statutory changes addressing wildlife resources.

The purposes of the amendments are clarification, organization, and consistency with proposed rules related to new wildlife conservation considerations and new public health and environmental considerations.

The size and make-up of the Commission were changed by the legislature in 2007. The number of copies of hearing applications to be submitted to the Commission is proposed to be increased accordingly (Rules 503.a. and h.).

The proposed requirement that hearing applications be submitted on compatible electronic media (Rule 503.a.) promotes administrative efficiency.

The proposed change to Rule 503.a. that specifies local and state governments are exempt from filing fees (even though there are no filing fees for any applicants at the current time) is to clarify that these exemptions will remain in place in the event filing fees are reinstated.

There are two types of hearing applications proposed to be added (by draft Rules 503.b.(7) and(8)) to comport with proposed substantive changes to other rules related to new wildlife considerations, new public health and environment considerations. There is one type of hearing application proposed to be added (by draft Rule 503.b.(9)) to comport with amendments to Rule 328 (Measurement of Oil) and Rule 329 (Measurement of Gas) promulgated by the Commission on April 1, 2008 to protect mineral interest owners.

The proposed amendments describe applications for hearings and the appropriate applicants related to proposed new hearing rights. These include hearings related to

untimely approval of Applications for Permits-to-Drill, Form 2, and Oil and Gas Location Assessments, Form 2A, covered by a Comprehensive Drilling Plan (Rule 216.e.(3)), untimely approval of Applications for Permits-to-Drill, Form 2, and Oil and Gas Location Assessments, Form 2A, not covered by a Comprehensive Drilling Plan (Rule 303.e.(2)), withholding approval of Applications for Permits-to-Drill, Form 2, and Oil and Gas Location Assessments, Form 2A, when the local governmental designee requests a hearing (Rule 303.m.(5)), Director's approval of an Oil and Gas Location Assessment, Form 2A (Rule 216.e.(4)), withholding approval of Applications for Permits-to-Drill, Form 2, and Oil and Gas Location Assessments, Form 2A, when a request for hearing is made by the operator, owner of the affected land, the local government, CDPHE or CDOW, and hearings related to measurement of oil (Rule 328.) and measurement of gas (Rule 329.)

Applications for increased well density (as defined by Rule 508) must be accompanied by a proposed plan ("Proposed Plan") to protect the environment and public health, safety, and welfare. Changes are proposed to Rule 503.c. to rearrange and conform the language to legislative changes to the Act in 2007 by adding "wildlife resources" to the list of items to be addressed in a Proposed Plan.

Rule 511., if all proposed changes are made, will relate entirely to uncontested hearings. Current Rule 511.a., requiring the Secretary to set a matter for hearing after an application is filed, is proposed to be moved to Rule 503.d., which describes the application procedure for all applications.

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

The parties expected to benefit from the amendments are entities that may apply for hearings before the Commission including, for example, oil and gas producers, state and local agencies, the owner of affected surface, and mineral interest owners.

The amendments provide clarification as to the number of copies that need to be submitted for hearing applications. They provide clarification as to who may apply for certain types of hearings. They provide clarification that wildlife resources are subject to local public forums. Without the proposed amendments, Rule 503 would not be clearly understood and would not comport with legislative changes to the Act in 2007. The amendments also generate information benefits that will allow better planning by hearing applicants including regulated entities and entities that have new hearing rights under proposed amendments to other rules (*e.g.*, state and local agencies, affected surface owner, mineral interest owners).

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

Hearing applicants will likely incur minimal additional costs as a consequence of the proposed amendments that increase the numbers of copies required to be submitted. Hearing applicants for new types of hearings will incur costs of the hearing before the Commission. Hearings before the Commission vary depending on the complexity of the issues. Each adjudicatory hearing usually takes up less than four hours of the Commission's time; however, it is estimated that the parties could spend two to four hours preparing for each hour of hearing. The probable costs incurred by those parties depend on the complexity of issues. However, an application for a hearing before the Commission is at the option of the applicant. Thus, it is unlikely that a regulated entity would apply for a hearing before the Commission if the anticipated costs were unreasonable.

The proposed amendments are not expected to impose more than minimal additional costs on hearing applicants (for additional copies of applications and other hearing submissions). The most significant changes to Rule 503 are in Rules 503.b.(7), (8), and (9). However, these rules do not grant hearing rights; rather they set forth the process for applying for new types of hearings by new hearing applicants that have been granted hearing rights by changes to other rules.

The Commission may expect to have a more varied hearing docket. However, it is not anticipated that the frequency of regularly scheduled Commission hearings will be affected.

Since the proposed amendments mainly describe the procedures for applicants to request new types of hearings before the Commission, they are not expected to affect the state's economy, economic competitiveness, or job creation. The proposed amendments should not force the cessation of business by any existing businesses. It is estimated that there will be no monetary impact of the proposed amendments on state revenue.

4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

Because the proposed amendments generate informational benefits by assisting applicants to plan, they are unlikely to have any adverse effect on small businesses, consumers, private markets, or particular geographic regions. They do not impose any

direct requirements on any business entities, regardless of size or location. The proposed amendments do not impose licensing, permit, or educational requirements and, therefore, do not create barriers to entry. They do not affect the availability of goods or services and, therefore, will not restrict consumer choice or private markets.

- 5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

Without the proposed amendments, Rule 503 would not comport with legislative changes enacted in 2007 or with changes and proposed changes to other Commission rules. There were no alternatives or voluntary standards relevant for consideration in place of these proposed amendments.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 507 (amended) - NOTICE OF HEARING

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)]
and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

Rule 507 sets forth the requirements for notices of hearing applications filed with the COGCC.

The proposed amendments clarify the traditional practice of providing notice not only to the complainant, but also to the respondent to an enforcement action, *i.e.*, the violator, operator, or responsible party. In addition, the proposed amendments set forth requirements for notice of hearing applications regarding Memoranda of Understanding with local governments, a new type of hearing proposed by draft Rule 521..

The statutory authority for Rule 507 includes C.R.S. §§34-60-106(6) and 34-60-121. These statutes provide the authority to conduct hearings and set forth a process to address violations of the rules and statutes.

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

Those parties expected to derive benefit from the proposed amendments to Rule 507.b. and Rule 507.c. include local governments, the Division of Wildlife, and the Colorado Department of Public Health and Environment (in certain cases for purposes of intervention under Rule 509 to protect the environment and public health, safety, and welfare). Further, parties to be given notice in enforcement proceedings are clarified in Rule 507.b.(6) by including the violator, responsible party, or operator, as applicable, in addition to the complainant.

The benefits accruing to those parties entitled to receive notice under Rule 507 would be notification that applications for hearing or enforcement proceedings have been filed with the OGCC so those parties could determine whether or not to participate in the proceedings.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

New hearing applicants and participants will incur costs of the hearing before the Commission. Under the proposed amendments to Rule 507, those entities include local governments executing a Memorandum of Agreement with the OGCC, OGCC staff, the Colorado Department of Public Health and Environment, and the Colorado Division of Wildlife.

Hearings before the Commission vary depending on the complexity of the issues. Each adjudicatory hearing usually takes up less than four hours of the Commission's time; however, it is estimated that the parties could spend two to four hours preparing for each hour of hearing. The probable costs incurred by those parties depend on the complexity of issues. However, an application for a hearing before the Commission is at the option of the applicant. Thus, it is unlikely that parties would apply for a hearing before the Commission if the anticipated costs were unreasonable.

The proposed amendments do not grant hearing rights; rather they set forth notice requirements for a new type of hearing (Memorandum of Agreement with Local Government) and notice requirements for intervention by the Colorado Department of Public Health and Environment and the Colorado Division of Wildlife in certain types of matters. The rights to hearing and intervention have been granted by changes to other rules.

The Commission may expect to have a more varied hearing docket. However, it is not anticipated that the frequency of regularly scheduled Commission hearings will be affected.

Since the proposed amendments mainly describe notice requirements for hearings before the Commission, they are not expected to affect the state's economy, economic competitiveness, or job creation. The proposed amendments should not force the cessation of business by any existing businesses. It is estimated that there will be no monetary impact of the proposed amendments on state revenue.

- 4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

Because the proposed amendments generate informational benefits by providing notice of hearings, they are unlikely to have any adverse effect on small businesses, consumers, private markets, or particular geographic regions. They do not impose any direct requirements on any business entities, regardless of size or location. The proposed amendments do not impose licensing, permit, or educational requirements and, therefore, do not create barriers to entry. They do not affect the availability of goods or services and, therefore, will not restrict consumer choice or private markets.

- 5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

Without the proposed amendments, Rule 507 would not comport with legislative changes enacted in 2007 or with proposed changes to other Commission rules. There were no alternatives or voluntary standards relevant for consideration in place of these proposed amendments.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 508 (amended) - LOCAL PUBLIC FORUMS, HEARINGS
ON APPLICATIONS FOR INCREASED WELL DENSITY, PUBLIC ISSUES
HEARINGS, AND GEOGRAPHIC AREA PLANS

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)]
and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

Rule 508 provides the authority and process to be utilized in conducting a local public forum, hearings on applications for well density (as defined in the rule) and public issues hearings.

The proposed amendments clarify the limited circumstances for which the rule is applicable, include the Colorado Division of Wildlife and the Colorado Department of Public Health and Environment into the OGCC process, and add wildlife resources to the list of issues that will support a request for a local forum or a public issues hearing or conditions of approval to be added by the OGCC to an application for increased well density. In addition, the amendments add the Colorado Division of Wildlife (“DOW”) and the Colorado Department of Public Health and Environment (“CDPHE”) to the entities that can request a local public forum and to the list of entities to receive notice of a local public forum. The legislative changes to the Act in 2007 required the OGCC to promulgate rules to include the Colorado Division of Wildlife and the Colorado Department of Public Health and Environment in the OGCC process.

The statutory authority for Rule 508 includes C.R.S. §§34-60-105, 34-60-106(6), 34-60-106(11), 34-60-108, and 34-60-128. These statutes provide the authority to conduct hearings, set forth a process to conduct those hearings

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

Those parties expected to derive benefit from Rule 508 include local governments, the DOW and CDPHE by bringing them into the COGCC process by giving those entities standing to request a local public forum and including them on the list of entities to

receive notice of a local public forum. The regulated community and the general public will also derive benefit from this rule

Both DOW and CDPHE will be brought into the COGCC process by giving those entities standing to request a local public forum and including them on the list of entities to receive notice of a local public forum. By so doing, the amendment will add wildlife resources to the list of issues that will support a request for a local public forum or a public issues hearing or conditions of approval to be added to certain applications. The amendment will increase the availability and accessibility of information to assist state and local agencies, the regulated community, and the general public to better understand the potential impacts to the environment and public health, safety and welfare. The language of Rule 508.a. has been rearranged to clarify the limited circumstances in which this Rule is used and to define terms (“application for increased well density” or “application”) that are used in this Rule that may have different meanings under others Rules

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

Hearing applicants will likely incur minimal additional costs as a consequence of the proposed amendments that increase the numbers of copies required to be submitted.

Hearing applicants for new types of hearings will incur costs of the hearing before the Commission. Hearings before the Commission vary depending on the complexity of the issues. Each adjudicatory hearing usually takes less than four hours of the Commission’s time; however, it is estimated that the parties could spend two to four hours preparing for each hour of hearing. The probable costs incurred by those parties depend on the complexity of issues. However, an application for a hearing before the Commission is at the option of the applicant. Thus, it is unlikely that a regulated entity would apply for a hearing before the Commission if the anticipated costs were unreasonable.

The proposed amendments are not expected to impose more than minimal additional costs on hearing applicants (for additional copies of applications and other hearing submissions). However, these rules do not grant hearing rights; rather they set forth the process for applying for new types of hearings by new hearing applicants that have been granted hearing rights by changes to other rules.

The Commission may expect to have a more varied hearing docket. However, it is not anticipated that the frequency of regularly scheduled Commission hearings will be affected.

Since the proposed amendments mainly describe the procedures for applicants to request new types of hearings before the Commission, they are not expected to affect the state's economy, economic competitiveness, or job creation. The proposed amendments should not force the cessation of business by any existing businesses. It is estimated that there will be no monetary impact of the proposed amendments on state revenue.

- 4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

Because the proposed amendments generate informational benefits by providing notice of hearings, they are unlikely to have any adverse effect on small businesses, consumers, private markets, or particular geographic regions. They do not impose any direct requirements on any business entities, regardless of size or location. The proposed amendments do not impose licensing, permit, or educational requirements and, therefore, do not create barriers to entry. They do not affect the availability of goods or services and, therefore, will not restrict consumer choice or private markets.

- 5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

Without the proposed amendments, Rule 508 would not comport with legislative changes enacted in 2007 or with proposed changes to other Commission rules. There were no alternatives or voluntary standards relevant for consideration in place of these proposed amendments.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 509 (amended) –
PROTESTS/INTERVENTIONS/PARTICIPATION IN ADJUDICATORY
PROCEEDINGS

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)]*
and
- c) *a reference to the statute(s) providing authority for the proposed rule.*

Rule 509 makes provision for qualified individuals or entities to file a protest or intervention to participate formally in any adjudicatory proceeding.

The proposed amendments would bring the Division of Wildlife (“DOW”) and the Colorado Department of Public Health and Environment (“CDPHE”), upon timely application, into the COGCC process by permitting their intervention in any adjudicatory hearing before the Commission and raise issues related to wildlife resources (in the case of DOW) or the environment and public health, safety and welfare (in the case of CDPHE).

The statutory authority for Rule 509 includes §§34-60-105, 34-60-106(6) and (11)(a)(II), 34-60-108, and 34-60-128(3)(d)(III)(A) and (B). These statutes provide the authority to conduct hearings and set forth a process to conduct those hearings.

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

Those parties expected to derive benefit from Rule 509 include the DOW and CDPHE by bringing them into the COGCC process by giving those entities the right, on timely filing, to seek inclusion in any adjudicatory hearing as intervener. The regulated community and the general public will also derive benefit from this rule.

Both DOW and CDPHE will be brought into the COGCC process by giving those entities the right, on timely filing, to seek inclusion in any adjudicatory hearing as intervener. The amendment will increase the availability and accessibility of information to assist state and local agencies, the regulated community, and the general

public to better understand the potential impacts to the environment and public health, safety and welfare in matters brought before the Commission for adjudicatory hearing.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

Hearing applicants will likely incur minimal additional costs as a consequence of the proposed amendments that increase the numbers of copies required to be submitted. Hearing applicants for new types of hearings will incur costs of the hearing before the Commission. Hearings before the Commission vary depending on the complexity of the issues. Each adjudicatory hearing usually takes less than four hours of the Commission's time; however, it is estimated that the parties could spend two to four hours preparing for each hour of hearing. The probable costs incurred by those parties depend on the complexity of issues. However, an application for a hearing before the Commission is at the option of the applicant. Thus, it is unlikely that a regulated entity would apply for a hearing before the Commission if the anticipated costs were unreasonable.

The proposed amendments are not expected to impose more than minimal additional costs on hearing applicants (for additional copies of applications and other hearing submissions). However, these rules do not grant hearing rights; rather they set forth the process for applying for new types of hearings by new hearing applicants that have been granted hearing rights by changes to other rules.

The Commission may expect to have a more varied hearing docket. However, it is not anticipated that the frequency of regularly scheduled Commission hearings will be affected.

Since the proposed amendments mainly describe the procedures for applicants to request new types of hearings before the Commission, they are not expected to affect the state's economy, economic competitiveness, or job creation. The proposed amendments should not force the cessation of business by any existing businesses. It is estimated that there will be no monetary impact of the proposed amendments on state revenue.

- 4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

Because the proposed amendments generate informational benefits by providing notice of hearings, they are unlikely to have any adverse effect on small businesses, consumers, private markets, or particular geographic regions. They do not impose any direct requirements on any business entities, regardless of size or location. The proposed amendments do not impose licensing, permit, or educational requirements and, therefore, do not create barriers to entry. They do not affect the availability of goods or services and, therefore, will not restrict consumer choice or private markets.

- 5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

Without the proposed amendments, Rule 509 would not comport with legislative changes enacted in 2007 or with proposed changes to other Commission rules. There were no alternatives or voluntary standards relevant for consideration in place of these proposed amendments.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 512 (amended) –COMMISSION MEMBERS REQUIRED FOR HEARINGS AND/OR DECISIONS

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)] and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

Rule 512 defines the number of members of the Commission required to constitute a quorum for the transaction of business.

The proposed amendment to the previously rule changes the number of members of the Commission required to constitute a quorum for the transaction of business from the previous seven members to nine members. This proposed revision comports with the 2007 statutory change in the total number of Commissioners from seven members to nine members.

The statutory authority for Rule 512 includes C.R.S. §34-60-104(2)(a)(I). This statute expands the Commission the previous seven members to nine members.

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

Those parties expected to derive benefit from Rule 512 include the regulated community, government agencies, and the general public by providing more diversity to the Commission resulting in more balanced and improved decision making.

The regulated community, government agencies, and the general public will derive benefit from an expanded number of Commissioners by bringing more diversity to the Commission, as required by statute, resulting in more balanced and improved decision making.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*

b) an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]

Increasing the quorum from four members to five members for transaction of business by the Commission will not impose any new costs to any party, and, specifically, will not impose any news costs on the state government. This rule is expected to have minimal impact on economic competitiveness, job creation, or state revenues.

4) Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]

The proposed amendments do not impose any direct requirements on any business entities, regardless of size or location. The proposed amendments do not impose licensing, permit, or educational requirements and, therefore, do not create barriers to entry. They do not affect the availability of goods or services and, therefore, will not restrict consumer choice or private markets. The rule is not expected to have more than a minimal impact on small businesses.

5) Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]

Without the proposed amendments, Rule 512 would not comport with legislative changes enacted in 2007 or with proposed changes to other Commission rules. There were no alternatives or voluntary standards relevant for consideration in place of these proposed amendments.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 513 (new) - GEOGRAPHIC AREA PLANS

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)]
and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

The statutory authority for Rule 513 include sections 34-60-106(11)(a) and 34-60-128(3)(d)(ii), C.R.S. These recent statutory additions direct the OGCC to promulgate new rules to protect public health, safety, and welfare in the conduct of oil and gas operations and to minimize adverse impacts to wildlife resources from such operations. The latter provision further directs that these rules should address geographic area planning.

Geographic area planning allows the OGCC to address potential activities by multiple operators, better identify cumulative adverse impacts, and require appropriate mitigation for such impacts. It also enables the OGCC to tailor regulatory standards to different areas of Colorado, which may raise different geologic, hydrologic, environmental, and wildlife issues. The OGCC has previously developed basin-wide rules on occasion, as reflected in existing Rules 318A and 318B, but the existing rules do not specify the process for or content of such plans. Rule 513 will define this process and content and implement the legislature's directive.

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

The proposed rule will benefit the general public, the regulated industry, and state agencies. The general public will benefit from geographic planning because it will identify activities to occur in a defined geographic area, identify potential cumulative adverse impacts, and identify appropriate mitigation for such impacts. This will result in better protection of public health, safety, and welfare, including the environment and wildlife resources. The regulated industry will benefit because the proposed rule defines a process for adopting geographic area plans, which will include public notice, a public hearing, and consultation with the Department of Public Health and the Environment, the Division of Wildlife, and local governments. It also defines the content of geographic area plans, which may include alternative development scenarios, designate

units, adopt spacing orders, implement sampling or monitoring plans, or require consolidation of facilities. These measures will allow operators to better understand the process for implementing or adopting geographic area plans. Finally, the proposed rule facilitates geographic area planning, which will enable the OGCC to adopt basin-specific rules to address unique geologic or hydrologic features and ensure that cumulative adverse impacts are properly mitigated. By setting out the procedures by which such rules are to be adopted, Rule 513 will provide clarity to the COGCC, other state agencies, the regulated industry, and the general public.

The concept of geographic area planning has been supported by numerous participants in the rulemaking process, including Garfield County, San Miguel County, Pitkin County, the Colorado Oil and Gas Association, the Nature Conservancy the Western Colorado Congress, the Colorado Wildlife Federation, the National Wildlife Federation, and the Colorado Mule Deer Association.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

The proposed regulation does not impose any direct requirements on other entities or small businesses. If the OGCC initiates a geographic area plan, then it may require oil and gas operators in that area to report certain information. However, existing Rule 206 already grants the OGCC that authority. The decision by such operators or others to participate in the public hearing or take other action regarding the planning process would be in their discretion, undertaken only when the operator determines that the benefits of doing so outweigh the costs.

The proposed regulation will not impose any new costs on the government because it does not require the use of geographic area planning and because the OGCC has previously engaged in such planning on an ad hoc basis.

This rule is expected to have minimal impact on economic competitiveness, job creation, or state revenues.

- 4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

The proposed regulation does not impose any direct requirements on other entities or small businesses, and no other adverse effects are expected. It also does not impose any direct requirements on other entities, regardless of their size and location. The geographic area planning procedures are the same regardless of size or location of a company because the procedural objectives of transparency, public participation, and state and local government input do not depend upon those factors.

The rule is therefore not expected to have more than a minimal impact on small businesses, consumers, or private markets.

- 5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

We considered various alternatives, including no action, precluding geographic area planning, and mandating geographic area planning under certain circumstances. We did not select the no action alternative because without Rule 513, the COGCC may be less likely to engage in geographic area planning and to obtain the benefits associated with such planning. If the COGCC does engage in geographic area planning, then the process for and content of such plans may be less consistent and predictable. This may require the COGCC and other participants to spend time resolving procedural and content issues on an ad hoc basis.

We did not prohibit geographic area planning because this would arguably violate section 34-60-128(3)(d)(II) C.R.S. and foreclose the benefits associated with such planning. We did not mandate geographic area planning because we determined that the Commissioners should decide whether and when to initiate such plans given the time and effort involved. This and other measures were discussed with various stakeholders, including several small businesses.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 521 (new) - MEMORANDA OF AGREEMENT WITH LOCAL GOVERNMENTS

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)] and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

The proposed rule sets out a process by which the COGCC might enter into memoranda of agreement with a local government to clarify, coordinate, and harmonize the relationship between the Commission's rules and the local government's regulations or ordinances. The statutory authority for Rule 521 includes sections 34-60-106(11)(a) and 34-60-128(3)(d), C.R.S. These recent statutory additions direct the COGCC to promulgate new rules to protect public health, safety, and welfare, including the environment and wildlife, in the conduct of oil and gas operations. In addition, new section 34-60-128(4) further directs that this legislation does not establish, alter, impair, or negate the authority of local and county governments to regulate land use related to oil and gas operations.

A number of local governments have expressed concern that the COGCC's new environmental and wildlife rules could operationally preempt the application of local regulations and ordinances to oil and gas development and thereby restrict local authority contrary to the legislature's directive. Concern was also expressed that the resolution of preemption issues can require time consuming and expensive litigation and that compliance with both state and local requirements can be burdensome and confusing. Rule 521 will avoid or minimize preemption disputes by authorizing the COGCC to enter into a memorandum of agreement with a local government to clarify, coordinate, and harmonize the relationship between the COGCC's rules and the local government's regulations or ordinances.

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

Local governments and operators alike will benefit from the proposed regulation because it facilitates the early and collaborative resolution of potential jurisdictional issues through the negotiation and approval of memoranda of agreement between the OGCC

and local governments. As such it will increase local accountability and encourage balance by requiring that memoranda of agreement must be consistent with the Oil and Gas Conservation Act, which provides for both development of oil and gas and protection of the environment and wildlife. Finally, it provides for transparency and public participation by requiring that memoranda of agreement must be approved by the OGCC through a formal public hearing that is preceded by public notice and allows a broad range of local interests and groups to participate. The public will thus also benefit from Rule 521.

A memorandum of agreement process was supported by numerous participants in the pending rulemaking process, including Colorado Counties, Inc., La Plata County, and Rio Blanco County, and an initial, high-level evaluation performed by the Gunnison County Attorney's Office indicates that at least 19 counties have land use and environmental requirements that apply or potentially apply to oil and gas development.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

The proposed regulation does not impose any direct requirements on other entities or small businesses, and it would thus not result in the imposition of any costs. The decision to seek a memorandum of agreement would be optional for local governments. If a local government seeks a memorandum of agreement then other entities, including small businesses, would have discretion whether to participate in the process. They would presumably only elect to do so when the benefits outweigh the costs.

The proposed regulation will not impose any new costs on the government because it does not require the use of memoranda of agreement and because the OGCC has previously spent time addressing preemption issues on an ad hoc basis. It could thus be reasonably expected to result in cost savings for government as well as private parties.

This rule is expected to have minimal impact on economic competitiveness, job creation, and state revenues.

- 4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

The proposed regulation does not impose any direct requirements on other entities, regardless of their size and location. The memorandum of agreement process is the same regardless of the size or location of an entity, because the procedural objectives of resolving jurisdictional issues promptly and collaboratively, increasing local accountability and balance, and promoting transparency and public participation do not depend upon those factors. The rule is therefore not expected to have more than a minimal impact on small businesses, consumers, or private markets.

- 5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

We considered various alternatives, including both no action and specifying in the rule how the OGCC and local requirements would be coordinated and harmonized. We did not select the no action alternative because without Rule 521, the number of preemption disputes and issues could increase in response to the expansion of oil and gas development in Colorado and the new and amended rules that the OGCC is considering to protect public health, safety, and welfare, including the environment and wildlife. This may require the OGCC, local governments, and the oil and gas industry to spend time attempting to resolve such disputes and issues on an ad hoc basis. It may also create confusion and uncertainty regarding the relationship between state and local requirements and increase regulatory compliance costs.

We did not specify in the rule how the OGCC and local requirements would be coordinated and harmonized because we determined that the Commissioners should resolve that issue on a case by case basis based on the local requirements and the other information developed through the negotiation and hearing processes.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 523 (amended) – PROCEDURE FOR ASSESSING FINES

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)]
and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

Rule 523 sets forth the procedure for the assessment of fines for violation of rules, permits, or orders.

The proposed rule establishes the maximum penalty for any single violation in the absence of significant waste of resources, damage to correlative rights, or a significant adverse impact on public health, safety, and welfare. The proposed changes include the “environment” and “wildlife resources” to the list of aggravating factors to be considered which conforms the Rule to the 2007 statutory changes. Rule 523(c) sets forth the table of base fines for violation of each Rule, and the table reflects additional fines for violations of additional Rules to be promulgated as a result of 2007 statutory changes.

The statutory authority for Rule 523 includes C.R.S. §34-60-121.

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

Rule 523 will benefit the general public by balancing the development of oil and gas with the impact to the environment and wildlife resources.

Benefits to natural resources will result by levying appropriate fines to parties responsible for negatively impacting the environment, wildlife resources and/or public health, safety, or welfare by either negligently or recklessly violating those rules and regulations promulgated to protect natural resources while oil and gas development occurs.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*

b) an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]

The proposed amendments will cause oil and gas operators to incur increased costs due to fines associated with violating rules and regulations promulgated to protect natural resources while oil and gas development occurs.

4) Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]

The proposed amendments do not impose any direct requirements on any business entities, regardless of size or location. The proposed amendments do not impose licensing, permit, or educational requirements and, therefore, do not create barriers to entry. They do not affect the availability of goods or services and, therefore, will not restrict consumer choice or private markets.

5) Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]

Without the proposed amendments, Rule 523 would not comport with legislative changes enacted in 2007 or with proposed changes to other Commission rules. There were no alternatives or voluntary standards relevant for consideration in place of these proposed amendments.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 603 (amended) – DRILLING AND WELL SERVICING OPERATIONS AND HIGH DENSITY AREAS

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)]
and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

The proposed amendments to Rule 603 contain a number of clarifications to the current rule with types of equipment that will be specifically included in the setback requirements.

Rules 603.a.(1) and 603.b currently include the term “occupied building.” There is no definition in the current regulations for “occupied building.” The use of conflicting or a poorly defined term has potential for misinterpretation of set back and high density requirements.

Proposed Rule 603.e.(3) would include setback requirements for pits and production equipment along with the current setback for production tanks. Pits used in the oil and gas industry have the potential to impact public health, safety and welfare and the environment. Leaking pits can impact shallow ground water, pits that overflow or overtop can impact surface waters, and odors and VOC emissions can impact public health. Currently Rule 603.e(3) only applies setbacks during “initial installation” and indicates that the set back has to be requested by the local governmental designee (LGD).

603.e.(12) provides additional clarification for secondary containment devices. In the current rule, only berms are mentioned. However, other forms of secondary containment devices are available to operators. The current rule also suggests that “remote ponding” is the preferred secondary containment method. Remote ponding, however, is not a preferred method and should be used only if other devices cannot be installed. The proposed rule also clarifies that containment requirements apply to condensate tanks and not just crude oil and produced water tanks.

Rule 603.j. includes the language “burning and burial of such material on the premises *may* be subject to other applicable laws”. This language lacks clarity and is not accurate. Burning and burial of waste generated at an oil and gas location is subject to local, state and federal solid and hazardous waste, or exploration and production waste regulations and air pollution control regulations and these requirements are clarified in the proposed amendments to Rule 603.j.

The statutory authority for amending Rule 603 is C.R.S. § 34-60-106(11) and 34-60-128.

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

The parties that are expected to benefit from the proposed rule include the regulated community, the general public and landowners where oil and gas operations occur.

The clarification to the current rules will assist the oil and gas industry in planning and making appropriate business decisions. Clarity and consistency in regulatory framework aids in decision making processes, increases efficiencies and improves performance. The general public will benefit because the proposed rule clarifies standards, such as setback standards, put in place to increase public safety. The potential for hazardous or toxic waste to be mistakenly buried in place will be reduced, thus benefiting the general public. Improperly handled hazardous or toxic waste can impact soil, groundwater, surface water and wildlife resources. The general public will benefit from increased protection of surface water and groundwater resources. The clarification to burning and burial of trash protects surface owners and landowners from potential long-term environmental liabilities.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

The proposed amendments are primarily clarifications to existing rules. Industry should not incur costs to be in compliance with the proposed setback requirements on production equipment and pit setback. The current practice is to have this equipment located close to the wellhead equipment, which was already subject to the setback rules.

The proposed rule is expected to have minimal impact on economic competitiveness, job creation, and state revenues. No additional costs to state government are anticipated.

4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

The proposed amendments apply equally to all entities regardless of size or geographic area and minimal impact to small businesses and private markets is anticipated. No impact to consumers is expected.

- 5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

Alternatives approaches considered were no action and voluntary compliance, however, neither approach could not be supported due to potential adverse impacts on public, health, safety and welfare and the environment.

A voluntary standard would not implement the rule objective because the parties benefiting from the absence of standards and incurring the cost of the proposed standard would not have an incentive to employ a standard for which the benefits are expected to accrue to the public at large.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 604 (amended) – OIL AND GAS FACILITIES

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)]
and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

The title for Rule 604 currently is PRODUCTION FACILITIES which could potentially exclude gas processing facilities where these regulations would also apply. The title of Rule 604.a. is currently CRUDE OIL TANKS which could be interpreted by some to exclude condensate tanks. The proposed rule would change the title of Rule 604. to “OIL AND GAS FACILITIES” and Rule 604.a. to “CRUDE OIL AND CONDENSATE TANKS” to minimize confusion and misinterpretation.

Rule 604.a.(3) currently refers to residences, normally occupied buildings, or well defined normally occupied outside area. There is no definition for residence or occupied building, in the COGCC rules. The proposed change to Rule 604.a.(3) would refer to building units for which there is currently a definition.

The proposed changes to Rule 604.a.(3) would include the requirement to provide secondary containment for the largest single tank and sufficient freeboard to contain precipitation. Additionally, berms and secondary containment devices must be sufficiently impervious to contain any spilled fluids.

Rule 604.a.(4) currently contains very general regulations for berms and does not specifically refer to secondary containment. Additionally, there is no requirement for construction criteria. Berms could be constructed to contain the volume of the largest tank for secondary containment horizontally but provide no secondary containment vertically if the foundation were constructed of porous material that would allow rapid percolation of spilled fluids.

Currently, Rule 604.a. does not contain any specifications for tanks as does Rule 603.e (13) for high density and designated outside activity areas. Additionally, there are no tank labeling requirements. The proposed Rule 604.a.(12) would contain statewide tank specifications.

Currently, there is no specific rule to address the protection of migratory birds from fired vessels such as heater-treaters. The U.S. Fish & Wildlife Service (USF&W) has determined that oil field heater-treaters on oil and gas leases create an environmental hazard to migratory birds. During 2006, the USF&W conducted selected inspections at

oil and gas tank batteries and reportedly found dead birds inside of heaters-treaters and other fired equipment. As a result, the COGCC adopted the Migratory Bird Policy with an effective date of March 1, 2007. The proposed Rule 604.b.(7) would require that fired vessels be equipped with screens or other appropriate equipment to prevent entry by wildlife and codifies the Migratory Bird Policy for regulatory enforcement.

Rule 604.e. currently requires buried or partially buried tanks used for E&P waste storage to be properly designed, constructed and installed in a manner to contain materials safely. There is no mention of proper operation. The proposed change to Rule 604.e. would add proper “operation” to the requirements for tanks.

Currently, Rule 604. does not contain any set-back requirements for pits or produced water vessels. The proposed Rule 604.f. would require that at the time of initial construction, pits must be set back 200 feet from a building unit.

Authority for the proposal of this rule is contained in C.R.S. § 34-60-106(2)(d), § 34-60-106(11), and § 34-60-128.

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

Parties expected to benefit from the proposed changes to the rule include surface owners and their appointed tenants, the general public, wildlife, especially migratory birds, and the COGCC.

The proposed changes to Rule 604.a.(4) will provide greater protection of the environment and shallow ground water by requiring berms and other secondary containment devices to be sufficiently impervious to contain spilled fluids both horizontally and vertically.

The proposed addition of Rule 604.a.(7) will provide greater protection for wildlife, especially migratory birds.

The proposed addition of Rule 604.f and set-back requirements will provide greater protection for public welfare, by minimizing exposure to nuisance odors, and to public safety by requiring pits to be further away from occupied structures and thus minimizing their potential to act as an attractive nuisance.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*

b) an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]

It is estimated that operators will not incur additional or significant costs. For instance, proposed changes to Rule 604.a.(4) would require industry to construct berms more efficiently to contain spill fluids thus reducing the environmental liability and costs for the remediation of soils and/or ground water. Likewise, the majority of oil and gas operators have already complied with the requirements of proposed Rule 604.a.(7) as a result of the COGCC Migratory Bird Policy. Responsible parties that contribute to migratory bird deaths in fired vessels are subject to criminal prosecution by the U.S. Fish and Wildlife Service that can range up to a \$15,000 fine and 6 months imprisonment per violation. The EPA's requirements for Spill Prevention, Control and Countermeasure (SPCC) Plan for Oil Pollution Prevention, that most operators should already be in compliance with, have guidelines similar to those proposed in rule 604.a.(3) for secondary containment including volume calculations and local precipitation conditions (rainfall and/or snowfall).

It is estimated that the COGCC will not incur additional or significant costs. In addition, this rule is anticipated to have minimal impact on economic competitiveness, job creation, and state revenues.

4) Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]

The proposed changes would apply to all operators regardless of size. The rule is not expected to have more than a minimal impact on small businesses, consumers, or private markets.

5) Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]

Voluntary standards: Prudent management of E&P waste is not a voluntary program. The proposed changes are preferred to a voluntary standard because an oil and gas producer would have no incentive to incur costs of compliance when the benefits of compliance accrue to the public at large or to wildlife.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) – Subject: 608 (new) - COALBED METHANE WELLS

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)]
and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

The proposed rules would codify current requirements included in numerous orders that apply to operators of CBM wells in the Colorado portion of the San Juan Basin. These orders require operators to conduct various monitoring activities, including, but not limited to, bradenhead pressure testing; water well sampling and analysis; coal outcrop, gas seep, and spring mapping and testing; assessment of plugging procedures for and soil gas surveys around previously plugged and abandoned (P&A) wells, and post completion pressure build-up testing.

Since the onset of coalbed methane (CBM) production in Colorado there have been instances where leaking P&A oil and gas wells, unplugged orphaned wells, and conventional wells in which the coal seams have not been isolated have acted as conduits for the migration of CBM gas into ground water and surface water, and to the ground surface. In two instances, one in La Plata County and one in Las Animas County, CBM gas has migrated up leaking old wells and has caused explosions that destroyed structures and severely injured people. At least seven (7) water wells have been impacted by CBM gas migrating up leaking old wells in La Plata County and 13 water wells in Huerfano County have been impacted by CBM gas migration up what staff believes are natural geologic conduits. Also in La Plata County several hundred conventional gas wells have had excessive bradenhead pressures caused by CBM gas migration into the annulus between the surface and production casing. These wells have been remediated, thereby eliminating the potential for them to act as conduits for gas migration into ground water and to the ground surface. Ongoing bradenhead testing is the method used to detect excessive pressures, should they reappear in a well.

In addition methane seeping from the outcrops of coal seams has the potential to create explosive conditions if it accumulates in confined spaces, to stress and kill vegetation thereby impacting wildlife habitat and property values, and to impact ground water and water wells. Gas seeps at the outcrops of coal seams in the San Juan and Raton Basins have resulted in dead vegetation, gas seepage into and around several homes, and high concentrations of methane in water wells. Since methane is a colorless and odorless gas, even at explosive concentrations, it can go unnoticed unless testing and monitoring equipment are used to detect its presence.

In addition, the seepage of gas from the outcrop or leaking wells is a waste of a valuable natural resource and should be prevented wherever possible. In La Plata County the COGCC, industry, and other stakeholders are working collaboratively on a pilot gas seep mitigation project. The intent of the project is to identify, evaluate, and test methods for capturing and controlling the emission of methane from the outcrop and to test the applicability of using the methane emissions to fuel micro-turbines and generate electricity. The monitoring data that CBM operators are required to collect in La Plata County was essential for the development of this gas seep mitigation pilot project.

The proposed rules will provide COGCC staff with a mechanism to obtain data consistently for CBM wells regardless of their location. These data will be used to verify that water wells, ground and surface waters, and residents of the CBM producing basins are adequately protected and that impacts, should they occur, are quickly identified and mitigated. In addition, the data would be used to develop strategies for preventing the waste of methane from gas seeps and for mitigating impacts that result from gas seeps.

Authority for the proposal of this rule is contained in 34-60-106(2)(d) , 34-60(11), and 34-60-107.

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

Parties expected to benefit from the proposed rule include the general public living within CBM producing areas, oil and gas producers, and the COGCC.

Oil and gas producers and COGCC: Monitoring data (bottomhole pressure, bradenhead test, and outcrop monitoring) is used to evaluate the need for additional wells and to identify wells in which coal seams have not been properly isolated. Properly isolated coal seams minimize the potential threat of CBM gas migration into ground water and water wells. In addition this uncontrolled migration is a waste of CBM gas.

General public living within CBM producing areas: The monitoring data will be used to verify that water wells, ground and surface waters, the land surface and vegetation, and residents of the CBM producing basins are adequately protected and that impacts, should they occur, are quickly identified and mitigated. Monitoring will minimize the risk of potentially significant negative impacts to life and property in the affected areas.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*

b) an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]

Parties expected to incur costs from the proposed rule include oil and gas producers and the COGCC. This rule is expected to have minimal impact on economic competitiveness, job creation, or state revenues.

Oil and Gas Producers:

Rule 608.a.(1) & (2). Assessment and Monitoring of P&A Wells

In general operators of CBM wells in the San Juan Basin already are conducting the required P&A well monitoring, but only one time at each P&A well. The proposed rule would require them to return to these wells periodically for additional soil gas monitoring. Operators in other CBM producing basins would incur the additional costs. The estimated cost is \$2,146 per P&A well to plan and conduct a soil gas survey.

Rule 608.b. Water Well Sampling and Analysis

In general operators of CBM wells in the San Juan Basin already are conducting the required water well sampling and analysis. Operators in other CBM producing basins would have to incur the additional costs. The estimated total cost is \$1,500 per water well to collect and analyze samples.

Rule 608.c. Coal Outcrop and Coal Mine Monitoring

Operators of CBM wells in the San Juan Basin already are conducting the required outcrop monitoring. Operators in other CBM producing basins would have to incur the additional costs. In the San Juan Basin, operators have entered into voluntary agreements and share the costs of the required coal outcrop and seep monitoring. The estimated costs for the proposed monitoring for Colorado portion of the Raton Basin are:

- Mapping approximately 75 miles of coal outcrop in Las Animas County is \$235,000.
- Mapping approximately 75 miles of coal outcrop in Huerfano County is \$235,000.
- Soil gas survey at an abandoned coal mine is \$8,500.
- Soil gas survey at a methane seep \$8,500.

Rule 608.d. Post Completion Pressure Tests

In general operators of CBM wells in the San Juan Basin already are conducting the required post completion pressure tests. Operators in other CBM producing basins would have to incur the additional costs. The estimated costs for conducting a pressure build-up test ranges from approximately \$2,300 to \$14,000 per well. The range in cost is a result of different techniques used by different operators.

Rule 608.e. Bradenhead Testing

In general operators of CBM wells in the San Juan Basin already are conducting the required bradenhead tests. Operators in other CBM producing basins would have to incur the additional costs. The estimated costs for conducting a bradenhead testing is \$70 per well.

- 4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

The costs for the proposed rules would apply to all operators producing CBM gas regardless of size. Currently the San Juan and Raton Basin contain the vast majority of proven CBM reserves; however, CBM exploration and development is occurring on a very limited basis in the Piceance and Sand Wash Basins also.

The rule is not expected to have significant impacts on small businesses, consumers, or private markets.

- 5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

No action alternative: The no action alternative would result in the continuation of inconsistencies in monitoring requirements applied to CBM operators in the various CBM producing basins in Colorado. The ability to detect new occurrences or changes in methane seepage is impaired in regions with less stringent monitoring requirements. This could allow gas seepage to go undetected and unmitigated thereby increasing the potential risk of significant adverse impacts to life, property, water resources, and the environment.

CBM Basin Specific Orders: CBM basin specific orders, such as Orders 112-156 and 112-157 and subsequent orders for the San Juan Basin were considered and may be a valid alternative. Nonetheless, because the geologic, hydrogeologic, and engineering conditions and environmental issues are similar for all CBM production, staff's proposal for creating consistent monitoring requirements was the selected alternative.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 700 (amended) SERIES RULES, FINANCIAL ASSURANCE AND CONSERVATION AND ENVIRONMENTAL RESPONSE FUND

1) Please provide

- a) a description of the proposed rule,*
- b) a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)] and*
- c) a reference to the statute(s) providing authority for the proposed rule.*

The proposed amendments to the 700 Series Rules increase financial assurance for some operations and provide flexibility in determining the amount of financial assurance for other operations to reflect more accurately the cost to plug, abandon, close and reclaim oil and gas operations.

The proposed amendments also change the name of the Environmental Response Fund and increase (to \$4,000,000) the amount of the two-year average of the unobligated portion of the Oil and Gas Conservation and Environmental Response Fund to address environmental response needs of the OGCC.

The amounts of financial assurance have not been increased since 1996 and currently do not accurately reflect the cost of plugging, abandoning, closing and reclaiming oil and gas operations. Since 1996 the OGCC has plugged and reclaimed well sites using the money from 36 bonds posted by operators. The total plugging and reclamation costs for these wells were \$984,968 while the total amount from bond claims was \$498,907, indicating a shortfall of the current bonding levels.

Existing Rule 710., which refers to the Environmental Response Fund, is not consistent with current law (C.R.S. §34-60-122 (1)(b)). House Bill 05-1285 combined the Oil and Gas Conservation Fund and the Environmental Response Fund into one fund, the Oil and Gas Conservation and Environmental Response Fund. As a result, the Environmental Response Fund no longer exists, and all references to it need to be eliminated or modified. In addition, Senate Bill 06-142 put a \$4 million cap on the two-year average of the unobligated portion of the combined fund. The proposed amendments conform Rule 710. to these statutory changes in 2005 and 2006.

The statutory authority for the 700 Series Rules includes section 34-60-104.5, 34-60-105, 34-60-106(3.5), 34-60-106(12), 34-60-106(13), and 34-60-122, C.R.S. These statutes provide the authority for the Director to administer the provisions of the Act and enforce the rules, for the Commission to do whatever is reasonably necessary to carry out the provisions of the Act, for the Commission to require the furnishing of financial security for land damage, reclamation, and conducting oil and gas operations in compliance with rules promulgated to protect the environment, public health, safety and welfare, and

wildlife resources and habitat, and for the creation of the Oil and Gas Conservation and Environmental Response Fund.

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

The parties expected to benefit from the amendments are entities that fund the Oil and Gas Conservation and Environmental Response Fund through a mill levy on production value.

The amendments are expected to decrease the shortfall between monies from bond claims and monies from the Oil and Gas Conservation and Environmental Response Fund. The state ultimately guarantees that proper site closure standards are achieved at wells and other oil and gas operations. If an operator fails to meet the appropriate standards, financial assurance may be used to initiate the work needed to close the site properly. Any shortfall in funding for the project work is provided by the state through the Oil and Gas Conservation and Environmental Response Fund. The OGCC ultimately recoups the initial funding commitment at these sites through adjustments to a mill levy that is assessed on all operators based on the value of their in-state oil and gas production.

Increasing the financial assurance amounts will increase the portion of funding for appropriate site closure that is drawn from the site operator, thereby decreasing the portion that is funded by the overall industry through the mill levy. Reducing this burden to the industry (as opposed to the operator) is a benefit based on efficiency and equity considerations. The efficiency gains are realized by making those responsible for a site bear the expenses associated with their own actions, thereby taking financial burden off of those other industry entities that leave their sites better protected. This also creates equity benefits insofar as the approach that requires the polluter to pay for site closure and remediation is considered more fair and socially desirable. Without the proposed amendments, the OGCC would likely use increasing amounts of state funds in the future to plug orphaned wells and reclaim orphaned oil and gas sites.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

The parties expected to incur costs of the proposed amendments are oil and gas producers and other entities that conduct oil and gas operations including, without limitation, operators of centralized E&P waste management facilities, operators of natural gas gathering and natural gas processing facilities, and operators of Class II Underground Injection Control (UIC) wells.

All entities that conduct oil and gas operations in Colorado are likely to incur the costs of the proposed amendments. An estimated 90% of the entities that conduct oil and gas operations in Colorado are small businesses (i.e., less than 500 employees).

Approximately 280 companies will need to increase their blanket plugging bond from \$30,000 to \$60,000. Approximately 90 companies will need to increase their individual well plugging bond from \$5,000 to \$20,000. One company will need to post an additional bond of \$50,000 on each of its seven commercial UIC wells. The operators of approximately 20 centralized E&P waste facilities will need to have their bonds increased from \$50,000 to \$100,000.

The proposed amendments will not impose any new costs on the government. The proposed amendments should not force the cessation of business by any existing businesses because of the Commission's ability to grant variances to the proposed financial surety rules. It is estimated that there will be no monetary impact of the proposed amendments on sales, employment or tax revenue. The proposed regulation does not restrict consumer choice.

4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

Approximately 280 companies will need to increase their blanket plugging bond from \$30,000 to \$60,000. Approximately 90 companies will need to increase their individual well plugging bond from \$5,000 to \$20,000. One company will need to post an additional bond of \$50,000 on each of its seven commercial UIC wells. The operators of approximately 20 centralized E&P waste facilities will need to have their bonds increased from \$50,000 to \$100,000.

The entire increase in bonding amounts is estimated to be approximately \$11,100,000. An investment of this amount of money is estimated to earn 6% interest per year. The State of Colorado pays 3.9% interest on bonds posted. Therefore, the cost of this money is estimated to be \$233,100 per year.

Operators may need to post cash bonds. The average cost of implementation is estimated to be \$233,100 per year for an estimated 370 companies or approximately \$630 per year per operator.

The proposed regulation allows companies to post financial surety either on a well-by-well basis or on the basis of a blanket bond. The amount of financial surety varies based on the number of wells or the size or type of facility covered by the surety. This variance is logical because the financial surety is used to plug and abandon wells or close and reclaim facilities not properly plugged and abandoned or closed and reclaimed by the company. Higher numbers of wells and larger or more complex facilities should be covered by higher bonds.

The proposed amendments may create barriers to entry because financial assurance must be posted before any company can commence oil and gas operations in Colorado.

The proposed amendments will not restrict consumer choice (i.e., availability of goods or services; price increases; etc.) or private markets and will apply to all geographic regions.

- 5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

Without the proposed amendments, the OGCC would likely use increasing amounts of state funds in the future to plug orphaned wells and reclaim orphaned oil and gas sites. Using monies from state funds will likely increase the mill levy assessed on the in-state oil and gas production of all operators. Without the amendments, the burden of improperly closed and reclaimed oil and gas operations will be borne by all oil and gas operators, rather than those responsible for the improper closure and reclamation. There were no market alternatives or voluntary standards considered in place of these proposed amendments because such alternatives and standards would not work in this context. An alternative of increasing the blanket plugging bond for 100 or more wells from \$100,000 to \$200,000 was rejected because the COGCC has never made a claim on such bonds.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 804 (revised) – VISUAL IMPACT MITIGATION

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)]
and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

Production facilities constructed or substantially repainted after May 30, 1992 which are observable from any public highway shall be painted with uniform, non-contrasting, non-reflective color tones, (similar to the Munsell Soil Color Coding System) and with colors matched to but slightly darker than the surrounding landscape.

The current rule exempts production facilities constructed or substantially repainted prior to May 30, 1992. These older facilities should not be exempt. Visual pollution is the term given to unattractive or unnatural visual elements of a vista or landscape. Visual pollution is an aesthetic issue, referring to the impacts of pollution that impair one's ability to enjoy a vista or view.

Powers of Commission - The commission has jurisdiction over all persons and property, public and private, necessary to enforce the provisions of this article, and has the power to make and enforce rules, regulations, and orders pursuant to this article, and to do whatever may reasonably be necessary to carry out the provisions of this article (§34-60-105. C.R.S.).

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

All long-term production facilities should be painted to minimize visual impacts from a location typically used by the public such as a public highway. In certain areas, production facilities painted with uniform, non-contrasting, non-reflective color tones, and with colors matched to but slightly darker than the surrounding landscape may lessen impacts upon wildlife activity. Additionally, mitigating visual impacts will improve the appearance of the scenic landscape and thus benefit recreational consumers and the general public.

Recreational consumers and tourists generally prefer the natural landscape rather than tank battery equipment that has not been well maintained or painted. A tank battery

painted to be inconspicuous would minimize the negative impact upon the natural beauty value.

Tourism is a major component of Colorado's economic base. It encompasses a cross section of economic sectors. Visitors are drawn to Colorado year round, for the world-class skiing in the winter months, and the myriad of recreational activities and breathtaking scenery in the summer. Colorado's travel and tourism industry generated over \$14.1 billion in 2006. Public highways are a main portal for tourists from out-of-state as well as within the state.

There would be no direct costs to the regulatory agency. The proposed rule may provide new business opportunities for and have a positive financial impact on third party contractors, such as environmental consultants, service companies, analytical laboratories, waste management contractors.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

Any registered oil and gas operator with older facilities may be required to comply with the proposed rule depending on the location and vintage of their facilities.

The estimated cost to paint a tank battery facility with one tank and one heater/treater would be approx. \$2,000. The estimated cost to paint a tank battery facility with two tanks and one heater/treater would be approx. \$3,000. It is unknown how many facilities would require compliance under this proposed rule or if it is limited to certain geographic areas.

This rule is expected to have minimal impact on economic competitiveness, job creation, or state revenues.

4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

None. There are no expected adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions.

5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

Maintaining the status quo would result in those older facilities continuing to become more unsightly over time due to there not being any regulatory requirement to upgrade. One alternative would be to install or create a visual barrier between the tank battery equipment and the public highway. These visual barriers could be earthen, vegetative, or man-made. However, man-made barriers would be subject to the same uniform, non-contrasting, non-reflective color tones, and with colors matched to but slightly darker than the surrounding landscape.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 805 (new) - ODORS AND DUST

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)]
and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

The proposed changes to the existing regulation respond to mandates included in HB07-1341, which direct the Colorado Oil and Gas Conservation Commission to promulgate rules, in consultation with the Department of Public Health and Environment, to protect the health, safety and welfare of the general public in the conduct of oil and gas operations. C.R.S. § 34-60-106(11)(a)(II).

RULE 805.b.(2)

The proposed changes in Rule 805.b.(2) were designed specifically to reduce the incidence of odor complaints from citizens living and working in close proximity to oil and gas industrial zones and to reduce the incidence of future such complaints. The proposed changes require:

- *Condensate, crude oil and produced water tanks* with a potential to emit volatile organic compounds (VOCs) greater than 5 tons per year (TPY) and located in the Piceance and San Juan geologic basins and within ½ mile of a building unit, educational facility, assembly building, hospital, nursing home, board and care facility, jail, or designated outside activity area to install equipment capable of controlling 95% of VOC emissions. A valid permit to operate this equipment must be obtained from the Colorado Department of Public Health and Environment.
- *Glycol dehydrators* with a potential to emit VOCs greater than 5 TPY and located in the Piceance and San Juan geologic basins and within ½ mile of a building unit, educational facility, assembly building, hospital, nursing home, board and care facility, jail, or designated outside activity area to install equipment capable of controlling 90% of VOC emissions. A valid permit to operate this equipment must be obtained from the Colorado Department of Public Health and Environment.
- Other than those existing before November 1, 2008, pits with a potential to emit VOCs greater than 2 TPY shall not be located within ½ mile of a building unit, educational facility, assembly building, hospital, nursing home, board and care facility, jail, or designated outside activity area.

- Replacement of high-bleed pneumatic devices with low or no bleed devices, where technically feasible.
- Employment of green completion techniques when completing wells, where technically and economically feasible.

The proposed changes are needed to respond to increasing concerns raised about odors associated with oil and gas development. To illustrate the need, odor-related VOC emissions increased in Garfield County by 30% from 2004 to 2006 and have continued this upward trend. The distance requirements and emission control percentages in the proposed rule are designed to reduce the incidence of current and future odor complaints. Oil and gas development has caused sharp increases in the odor complaints to COGCC and local government in some Colorado regions, primarily in western slope oil and gas development regions. The affected regions tend to be where oil and gas development is expanding the fastest and where development occurs in close proximity to where people live and work. Topography, combined with, certain characteristics of production, meteorological conditions and human activity within close proximity to oil and gas equipment, can result in noxious odors that drive the number of citizen nuisance or welfare complaints.

From 2004 to 2007 Garfield County received 374 complaints, 94 of which involved oil and gas related odors (25%), based on the Garfield County complaint log. Garfield County further analyzed their complaint log and determined that out of 108 complaints 91% were within ½ mile of the oil and gas source. From 2006 to the present COGCC received 496 complaints, 121 of which involved oil and gas related odors (24.3%), based on an analysis of the data on the COGCC website.

The San Juan Basin, located partially in La Plata County, began experiencing significant oil and gas development growth well before Garfield County and odor complaints, while fewer in number, are nevertheless a problem. Recent CDPHE consultation with local government staff (La Plata County Oil and Gas Department and San Juan Basin Environmental Health Department) confirms that odor complaints occur and seem to be rising. This is true even though odor concerns are not as significant a problem as they are in Garfield County, primarily because gas produced in this basin generally contains less condensate, which is a significant source of odors.

In addition, in December 2006 during its Regulation 7 rulemaking covering the oil and gas industry, the Air Quality Control Commission heard notable public comment suggesting that noxious odors associated with oil and gas activities along the western slope affect citizens who live nearby. The odor issue continues to cause discomfort and distress to the public. These draft provisions are designed to alleviate the most serious of the odor or “public welfare” problems through emission controls, enhanced work practices and conservation applicable to the oil and gas equipment most likely to contribute to the odors.

RULE 805.b.(3)

The proposed changes to Rule 805.b.(3) require operators to use green completion practices to minimize the amount of condensate and natural gas released to the atmosphere. The emission reduction measures to be employed, as soon as practicable during flowback, include sand traps, surge vessels, separators, and closed top tanks.

Since 1997 the COGCC has received 188 odor complaints, of which 166 complaints were received from Garfield County. The majority of odor complaints concern flowback operations during well completion procedures. During completion procedures current regulations allow wells to be flowed into open tanks or open pits, a process that allows natural gas and condensate to disperse into the atmosphere. This practice not only creates petroleum odors but also disperses methane, a green house gas, to the atmosphere.

Airsheds of Colorado and neighboring states are directly impacted by concentrated oil and gas activities. For instance: (1) the Front Range region is presently violating the 8-hour ozone national ambient air quality standard, and oil and gas activities are a major contributor of emissions that form ozone; (2) southwestern Wyoming has experienced high levels of ozone pollution during winter months in an area where oil and gas activities dominate the landscape; (3) numerous reports and complaints of noxious odors and deteriorating public health are lodged in Garfield County by residents in close proximate to oil and gas operations; and (4) northwestern New Mexico and southwestern Colorado experience elevated ozone concentrations and impaired visibility in pristine national parks and wilderness areas that are directly attributed to concentrated coal-bed methane production.

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

The direct and indirect benefits of these proposed provisions are numerous.

RULE 805.b.(2)

The foremost direct benefit of Rule 805.b.(2) is reduced odors in close proximity to where people live and work, thereby enhancing public welfare. An ancillary benefit is reduced emissions of VOCs that contribute to the formation of ozone, visibility degradation and particulate formation. Another ancillary benefit of reducing VOC emissions in close proximity to people is the associated reduction of certain organic compounds that make up VOCs that have been deemed to be hazardous to human health (Note: these provisions have not been proposed to protect public health, since analysis of the public health impacts of such emissions has not been conducted). Finally the

provisions involving well completions and pneumatic devices reduce venting of natural gas, resulting in less waste of this scarce resource and reduced methane emissions.

Noxious odors that represent the source of the complaints are typically associated with the emissions of volatile organic compounds (VOCs), which can emanate from certain oil and gas production equipment. The draft rule provisions address this problem by requiring reductions of these emissions from particular pieces of equipment. Specifically, the draft rule addresses those pieces of oil and gas equipment that emit the largest amounts of VOCs and that are located throughout the Piceance and San Juan Basins; including condensate tanks, produced water tanks, pneumatic valves and glycol dehydrators; all of which constantly emit VOCs.

VOC emissions result in varying degrees of odor. At consistently various levels, some VOCs can also impact public health. Whether VOCs result in odor or public health effects depends on what the VOC quantities and composition are, as well as whether there are human receptors nearby. In virtually all cases, VOCs are invisible.

RULE 805.b.(3)

The general public is the primary beneficiary of Rule 805.b.(3) because the proposed rule would allow for greater recovery and sale of methane and other natural gases and result in a reduction of noxious odors and greenhouse gases from oil and gas facilities. The rule may also improve air quality by reducing ambient ozone concentrations, although photochemical modeling, which is required to quantify this benefit, has not been completed.

If the State were to complete photochemical modeling to estimate if and how the anticipated Volatile Organic Compound (VOC) emissions reductions would affect ambient ozone concentrations within the state, it would be possible to develop quantitative estimates of the health impacts for the changes anticipated as part of this rule. These quantitative estimates would be based on the estimated location, timing, and magnitude of the changes in ambient ozone concentrations combined with information on resident populations, widely accepted concentration response functions, and baseline incidence rates. Assuming the VOC emissions reductions result in reduced ambient ozone concentrations, estimates of avoided health outcomes that range in severity from premature death to days with acute respiratory symptoms could be produced. To the extent these air quality changes could be forecast over multiple years, a time series of health benefits could be estimated.

Without estimates of how the incidence of adverse health outcomes is expected to change over time, it is not possible to monetize potential public health benefits. However, it is worth noting that the economic literature in this area is particularly well developed. This body of literature has been applied to support monetary estimates of the potential health impacts of a number of rules focused on improving water quality and air quality. The majority of the monetized benefits of improvements in ozone concentrations are associated with estimated reductions in premature mortality. This value is in excess of

\$6.6 million per mortality, depending on how far in the future the reduction in mortality occurs. In contrast, the monetary estimates associated with other ozone-related health outcomes range from roughly \$10,000–\$25,000 for different categories of hospital admissions to tens of dollars for minor activity restrictions.

Similarly, it is possible that the reduction in odor and dust controls combined with improved visual aesthetics could improve residential values for those who live near relevant oil and gas production facilities. The monetary value of these potential improvements could be determined with survey-based research, and would likely be subject to a number of factors such as the nature and extent of the disruption (e.g., odors versus visual disruption) and the relative value of the housing stock in affected areas. For perspective, a limited list of calculated losses in property value resulting from various types of industrial activity is presented in the table below.

Percentage effects of hazardous waste sites on nearby residential property values

Study	Geographic area	Site characteristics	Percentage value lost
Adler et al. (1982)	New Jersey	Hazardous waste site	6% to 22%
Freshwater Foundation (1989)	Five Minnesota cities	Groundwater contamination, including VOCs at one site	10% or less
Ihlanfeldt and Taylor (2004)	Atlanta, Georgia	Twenty-three hazardous waste sites	12% to 36%
Nelson et al. (1992)	Ramsey County, Minnesota	Nuisance issues (e.g., noise, smell, traffic) from solid waste landfill	6% to 12%
Ozog et al. (1990)	Denver, Colorado	Industrial site with groundwater plumes contaminated soils and surface water	13%
Rowe et al. (1985)	Eagle, Colorado	Metals contamination from mining	35%
Schulze et al. (1986a)	West Covina, California	Groundwater contamination and methane gas releases from a landfill	5% to 10%
Schulze et al. (1986b)	Suburban Los Angeles, California	Groundwater contamination and methane gas releases from a landfill	2.5% to 5%

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

RULE 805.b.(2)

Rule 805.b.(2) requires operators of tanks and glycol dehydrators subject to the regulation to incorporate these operating requirements into air emissions permits they must already acquire from the CDPHE. This is necessary to ensure proper emission control equipment is applied and in good working order.

All operators subject to these provisions, who have not done so already on a voluntary basis, will have to purchase certain equipment necessary to comply with applicable requirements. COGCC solicited cost estimates earlier this year from the industry for all aspects of these proposed rules and were provided none. However, working with CDPHE, we have ascertained some cost estimates via EPA's Natural Gas Star materials as follows:

For Pneumatic Device:

Gas STAR Lessons Learned titled "Options for Reducing Methane Emissions from Pneumatic Devices in the Natural Gas Industry" (attached) describes costs and benefits associated with replacement, retrofit, and maintenance of high-bleed pneumatic devices. In addition to reducing volatile organic compounds, incorporating these changes also increases methane product that can be sold.

There is an associated payback. Examples of costs and payback time periods are:

- \$150 to \$250 to replace high-bleed devices with low- or no-bleed devices at end of life (payback in 5 to 12 months)
- \$1,350 to replace high-bleed devices with low or no-bleed devices prior to end of life (early replacement) (payback in 21 months)
- \$500 to retrofit high-bleed devices to low- or no-bleed devices (payback in 9 months)
- Negligible to \$350 to perform enhanced maintenance (payback in 0 to 5 months)

For Condensate Tank VOC controls (Flare):

Gas STAR PRO Fact Sheet No. 905, "Install Flares," presents information about the costs for installing a flare to control volatile organic compound emissions from condensate tanks. During 2006 regulatory proceedings, CDPHE had an occasion to estimate costs for controlling VOC emissions from condensate tanks. CDPHE estimated that in Colorado capital costs range from about \$10,000 - \$15,000 and the annual operating and maintenance costs range is \$1,000-\$2,000. From the 2006 information, assuming an emission control efficiency of 95% and control of 152 condensate tanks with associated VOC emission reductions of 5,637 TPY, the cost per ton of VOCs removed from the atmosphere is \$263, which makes this provision extremely cost effective. Once we are able to determine how many tanks will require controls pursuant to this draft provision (e.g. emissions of greater than 5 TPY and located within ½ mile of a residence) we will be able to fine tune these costs. In any event costs will be very reasonable and well below those for most other air pollution control measures.

For Glycol Dehydrators:

During 2006 regulatory proceedings, CDPHE had an occasion to estimate costs for controlling VOC emissions from glycol dehydrators. From that information, CDPHE determined a one time capital cost for installing VOC emission controls (a condenser and/or flare) on glycol dehydrators of about \$15,000-\$30,000 for the condenser (depending on size) and \$10,000-\$15,000 for the flare, also based on size. Annual operating and maintenance costs were estimated to be about \$1,000 to \$2,000. Assuming an emission control efficiency of 90% and control of 59 dehydrators with associated VOC emission reduction of 1,193 TPY, the cost per ton of VOCs removed from the atmosphere is \$165, which also makes this provision extremely cost effective.

It is worth noting that some operators already install and use this equipment voluntarily to avoid triggering more stringent and costly federal Clean Air Act requirements.

Once we are able to determine how many glycol dehydrators will require controls pursuant to this draft provision (e.g. emissions of greater than 5 TPY and located within ½ mile of a residence) we will be able to fine tune these costs. In any event costs will be very reasonable and well below those for most other air pollution control measures.

CDPHE also estimates relatively minor (\$2,000 - \$3,000 per facility) additional permitting costs for the operator.

COGCC and CDPHE believe there will be no material additional costs incurred by government because of implementation of this regulation. There will be some additional workload to process some level of increased permitting and to conduct inspections.

The rule is expected to have a minimal impact on economic competitiveness, job creation, or state revenues. State and local governments are not expected to incur additional costs or reduced revenue of any significance, as a result of this rule.

RULE 805.b.(3)

Pursuant to Rule 805.b.(3), operators will need to rent or purchase specialized equipment to place on a well site to enable the recovery of natural gas during completions. The proposed rule only requires the use of special equipment when production from the well is strong enough to overcome the pressure losses generated by the equipment. Weaker wells shall be completed using best management practices for the reduction of emissions.

EPA's Natural Gas STAR PRO Fact Sheet No. 703, "Green Completions" indicates that the annual capital cost for performing a green completion is between \$1,000 and \$10,000 and annual operating and maintenance costs are greater than \$1,000. In addition to

reducing volatile organic compounds, performing a green completion increases methane product that can be sold. The associated payback is between 1 and 3 years.

A presentation by Williams Production RMT at the 2007 Natural Gas STAR Production Technology Transfer Workshop included cost information associated with green completions conducted in the Piceance Basin from 2002 through 2006. The average methane recovery cost was 17.41 million dollars (please note, the presentation indicates these are units of thousand dollars, however, that was a typo). The average total revenue was 159.13 million dollars. That means that for every dollar spent on green completions, they received a payback of \$9.14.

By way of comparison, staff estimates that using full green completion technology will cost operators an additional \$4,000 per day for an average of six days.

The rule is expected to have a minimal impact on the general economy, economic competitiveness, job creation, or state revenues. State and local governments are not expected to incur additional costs or reduced revenue of any significance, as a result of this rule.

- 4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

The proposed rule applies to all operators regardless of business entity size.

Rule 805.b.(2) applies to certain equipment based on how many VOCs are emitted, because this approach ensures that only those pieces of equipment contributing to the odor problem are regulated. This rule will have different effects in particular geographic regions because it applies only to oil and gas operators in the San Juan and Piceance Basins. We concluded that only these regions are experiencing the odor problem for which this rule applies, so the statewide applicability of the provisions in the Rule 805 was neither necessary nor appropriate.

Small business owners are expected to implement these changes without undue burden or hardship, as evidenced by the ability of small business owners in other sectors (*e.g.* dry cleaning, gas stations operators, and auto body paint shops) to comply with similar rules. We do not expect this rule to result in the cessation of small businesses or have any impact on consumers.

Rule 805.b.(3) does not contain different requirements for different sized entities or regions. The regulation does contain different requirements based on the strength of the gas flow from each well. This is required because green completions require a stronger well to flow against the specialized equipment. In addition, operators may request a variance where they believe that green completions are not feasible.

5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

We considered several alternatives to Rule 805.b.(2), including taking no action, making the provisions of Rule 805 apply statewide and making the provisions apply to all listed equipment, regardless of their emission rates. Taking no action would result in a continuation of odor complaints in certain oil and gas development regions (e.g. the San Juan and Piceance Basins), with the rate of complaints in some places likely to increase as oil and gas development grows in residential and/or commercial areas. We therefore declined to implement the no action alternative. We declined to apply the provisions of Rule 805 statewide, because only the Piceance and San Juan Basins are experiencing the odor problem for which this rule applies. The statewide applicability of the provisions in Rule 805 was thus determined to be neither necessary nor appropriate. COGCC and CDPHE believe there are no less expensive options than promulgating the proposed rules, and that the options included in the rule are extremely cost effective, as compared with acceptable cost-effectiveness thresholds considered when managing air quality. This conclusion is partially demonstrated by the fact that some companies are already using at least some of these particular emissions reduction techniques to avoid public complaints. We also considered making the provisions apply to all listed equipment, regardless of their emission rates. We did not elect to take this approach because it would have resulted in controlling equipment that did not necessarily produce odors, since the source of the odors is VOCs.

With regard to Rule 805.b.(3), we considered taking no action and requesting the voluntary use of green completions. If this rule is not implemented, the oil and gas industry will continue to emit unnecessary volumes of green house gases and we will continue to receive complaints concerning odors. Therefore, we did not select a no action alternative. We have requested voluntary use of green completion practices in the past, but industry's compliance with this request has not been adequate to reduce odor complaints or the emission of green house gases. To achieve the benefits to the general public, as described in the response to questions #2, an enforceable rule needs to be in place. We therefore did not select a voluntary compliance alternative to Rule 805.b.(3).

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Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 901 (amended) – INTRODUCTION
901.d. ALTERNATIVE COMPLIANCE METHODS
901.e. SENSITIVE AREA DETERMINATION

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)]*
and
- c) *a reference to the statute(s) providing authority for the proposed rule.*

The proposed change to Rule 901.d. eliminates the option for operators to propose a risk based approach as an alternative compliance method. The proposed Rule 901.e. would require operators to use site specific geologic and hydrogeologic data, rather than the current Sensitive Area Determination Decision Tree, Figure 901-1 to evaluate the potential for E&P waste management activities to impact ground water and it would require operators to consider the potential for the activities to also impact surface water.

Rule 901.d. currently implies that risk based approaches can be proposed as alternative methods for compliance. There are no other provisions for risk based approaches in the existing rules. In addition, because of the broad distribution of wells throughout areas of the state where land uses are changing (i.e. ranch land being subdivided for rural residential development or areas of urban sprawl around larger cities and towns) it would be extremely difficult to evaluate whether a proposed risk based standard is appropriate for the long term use of the property. Any proposal for risk based closures where ground water quality did not meet the Basic Standards for Ground Water would likely require a hearing before the Water Quality Control Commission (WQCC) of the CDPHE. In addition, with nearly 35,000 active wells in the state and several thousand wells drilled and completed every year, it is not possible for the current staff to devote the time required to evaluate risk based proposals for remediation site closures.

Since the development of the Sensitive Area Determination Decision Tree (Figure 901-1) in the mid-1990's, staff has continuously encountered problems using it and has concluded that it is not useful in determining what the real potential is for impacts to ground water to occur. For instance, a site where ground water is at approximately 25 feet below surface would be considered a non-sensitive area even if the site were underlain by an unconfined aquifer or recharge zone such as the outcrop area of the Ogallala Formation and other aquifers in the eastern portion of the state. In addition, the COGCC has overseen and is currently overseeing numerous remediation projects where ground water that is deeper than 20 feet below the ground surface has been impacted by oil and gas operations. The potential for impacts to occur to surface water is not an evaluation criterion in the existing Sensitive Area Determination Decision Tree.

Authority for the proposal of this rule is contained in C.R.S. §34-60-106(2)(d) and §34-60-106(11).

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

Parties expected to benefit from the proposed rule include the general public currently living in proximity to E&P waste management facilities, future residents, ground water and surface water users. Closure of remediation sites by risk-based analysis using current land use would not be allowed, so future land uses would be more protected. Ground water and surface water resources would be better protected from potential impacts from E&P waste.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

Parties expected to incur costs from the proposed rule include oil and gas producers and the COGCC.

Oil and gas producers incurred costs: The estimated cost to compile and review the geologic, hydrogeologic, and other site specific data and to make a meaningful sensitive area determination is \$480 per site.

COGCC incurred costs: The estimated cost to review, data enter, and file the supporting data used in making the sensitive area determination is \$100 per site.

This rule is thus expected to have minimal impact on economic competitiveness, job creation, or state revenues or agencies.

- 4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

The costs for the proposed rule changes would apply to all operators regardless of size. The rule is not expected to have more than a minimal impact on small businesses, consumers, or private markets.

- 5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

No action alternative: The no action alternative would result in the continuation of the use of a generalized “one size fits all” approach to protecting ground water. Surface water would continue to not be considered and other site specific geologic and hydrogeologic data might not be used in the determination of whether a location was in a sensitive area. The existing approach results in a greater potential for sites to impact ground water and surface water.

Voluntary program: Prudent management of E&P waste is not a voluntary program. The proposed rule is preferred to a voluntary standard because an oil and gas operator would have no incentive to incur costs of compliance when the benefits of compliance accrue to the public at large.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 902 (amended) - PITS – GENERAL AND SPECIAL
RULES

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)]
and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

The proposed changes to the Rule 902.b. would require operators to develop a method for monitoring and maintaining freeboard, which should reduce the incidence of spills and releases caused by overtopping pits.

The proposed changes to Rule 902.c. would require operators to reduce nuisance odors by removing residual oil that may accumulate around the edge of a pit and treating the contents of pits when necessary to control the growth of bacteria. Not only does the oil on the pit or the residual oil around the edge of the pit have the potential to create an odor nuisance, but it also poses a risk to wildlife, especially migratory birds. Removal of this residual oil would also remove a risk to wildlife, especially migratory birds.

The proposed new Rule 902.d. would require operators to construct escape ramps from their pits.

Authority for the proposal of this rule is contained in 34-60-106(2)(d), 34-60-106(11), and 34-60-128.

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

Parties expected to benefit from the proposed rule include the general public living in proximity to oil and gas operations where pits are used and/or where oil or condensate are produced. Surface water, wildlife, and wellsite personnel would also be more protected.

Operators have reported and COGCC staff has observed numerous instances of pits being overfilled which has resulted in discharges of the pit contents to the environment, including surface water. The proposed requirement to monitor and maintain a minimum

of two (2) feet of freeboard at all times, should eliminate pits from overflowing, the potential impacts to ground water, surface water, soil, vegetation, and wildlife, and the costs for remediating such impacts when they occur.

COGCC staff has responded to numerous complaints regarding odors associated with pits. The source of the odors is often oil on the pits that has not been removed by the operator as required currently by Rule 902.d., or residual oil around the edge of the pit that remains even after the pit has been skimmed. COGCC staff has also responded to complaints associated with odors created by bacterial growth in pits. This is most likely to occur during the warmer months of the year. The proposed requirement to clean the exposed liners to eliminate the residual hydrocarbon will reduce nuisance odors and will help to protect wildlife, especially migratory birds, from coming in contact with it.

To minimize the amount of surface disturbance associated with preparation of drilling pads and well sites, pits are constructed to maximize volume over surface dimensions. As a result pits with vertical sides often are used. Current Rule 902.e. requires that pits be fenced to prevent access by wildlife, domestic animals, or the public; however, should any such being fall into or otherwise end up in a pit with vertical walls, escape is impossible unless someone else is there to assist. The proposed requirement to construct escape ramps would protect the general public, wellsite personnel, wildlife and domestic animals.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

Parties expected to incur costs from the proposed rule include oil and gas producers and the COGCC.

Oil and gas producer incurred costs:

Rule 902.b. monitoring fluid level in pits and maintaining freeboard. The estimated cost to install a gage or some other device for monitoring fluid level is \$526 per pit, which includes the cost of the equipment. This cost estimate does not include the cost for ongoing maintenance of the measuring device and repairing or building up pit walls to maintain adequate freeboard.

Rule 902.c. cleaning oil from exposed liners. The estimated cost to clean residual oily waste from a pit liner is \$576 per site, which includes the cost of equipment rental.

Rule 902.d. constructing escape ramps from pits. The estimated cost to construct an escape ramp is \$10,000 (assumed 1/3 cost of constructing a 50' X 100' X 12' pit, which is estimated to be \$30,000). This cost estimate does not include the cost for the additional land area on which to construct the ramp and the additional costs for reclamation of the resulting bigger pit.

COGCC incurred costs: It is estimated that the proposed rule changes will decrease staff's involvement in investigation and oversight of remediations required for cleanup of spills/releases from overflowing pits, and decrease time needed to respond to odor complaints and impacts to wildlife from oil in pits, thereby lowering overall cost of regulation.

This rule is expected to have minimal impact on economic competitiveness, job creation, or state revenues.

- 4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

The costs for the proposed rules would apply to all operators who use pits as part of their oil and gas operations regardless of size. The rule is therefore not expected to have more than a minimal impact on small businesses, consumers, or private markets.

- 5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

No action alternative: The no action alternative would result in the continuation of a higher potential for accidental discharges to surface water and the environment caused by pits overflowing, for nuisance odor complaints to occur, and for wildlife, domestic animals, workers, and rig hands, and the general public that may accidentally enter the pit not to be able to escape and to drown.

Voluntary program alternative: Prudent management of E&P waste is not a voluntary program. The propose rule is preferred to a voluntary standard because an oil and gas operator would have no incentive to incur costs of compliance when the benefits of compliance accrue to the public, wildlife, and domestic animals.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 903(amended) – PIT PERMITTING/REPORTING REQUIREMENTS

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)] and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

The proposed changes to this rule are intended to clarify and simplify which pits need to be permitted and which pits only need to be reported to the COGCC.

Rule 903 covers provisions for the permitting or reporting of pits used for oil and gas operations. The Earthen Pit Construction Report/Permit, Form 15 has two purposes: operators use it as an application for a pit permit and they also use it to report certain pits to the COGCC when a permit is not required. The existing rule is confusing and needs to be simplified for both COGCC staff and operators. In addition, the dramatic increase in oil and gas operations in the state, including the use of a wide variety and large number of pits has necessitated updating the COGCC's approach to the regulation, permitting, and tracking of pits.

Authority for the proposal of the rule is contained in C.R.S. § 34-60-106(2)(d) and § 34-60-106(11).

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

The COGCC and the regulated community are expected to benefit from the proposed rule.

The proposed changes to this rule are intended to clarify and to simplify which pits need to be permitted and which pits only need to be reported to the COGCC. This should help reduce confusion among regulated parties and minimize the need for staff to explain to operators how to apply the requirements of this rule.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

Parties that may incur costs from the proposed rule include oil and gas producers who would not have been required to obtain a permit under existing rules and the COGCC.

Operators may need to use the Form 15 as a pit permit rather than a pit report more frequently than under the existing rule, but the information required will be the same and should not result in additional costs. In addition, operators may be required to permit more drilling pits as a result of the proposed change in threshold concentrations for total petroleum hydrocarbons and chloride that trigger the need for a pit permit, but the number of additional pit permits is not known at this time.

Currently COGCC incurs a cost of approximately \$47 for the review, data entry, and file management for either a Form 15 pit permit or report. More permits may be required, but the number can not be estimated at this time.

This rule is expected to have minimal impact on economic competitiveness, job creation, or state revenues.

- 4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

The costs for the proposed rules would apply to all operators using pits that require a Form 15 regardless of the size of the company.

The rule is therefore not expected to have more than a minimal impact on small businesses, consumers, or private markets.

- 5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

No action alternative: The no action alternative would result in the continued use of a rule that staff and many operators believe is confusing. The proposed changes to the rule are intended to clarify the pit permitting or reporting requirements and do not contain significant additional regulatory requirements.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 904 (amended) - PIT LINING REQUIREMENTS AND SPECIFICATION

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)] and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

Rule 904 outlines requirements for pit lining and provides specifications for lining material and the installation, construction and maintenance of pit liner. Revised Rule 904 modifies which drilling pits have to be lined based on drilling fluid content, modifies the procedure for determining if a production pit has to be lined, requires that special use pits be lined, includes a requirement that skim pits regardless of construction date be lined and provides a list of other types of pits that that will have to be lined (water storage pits used to contain recycled or reused produced water or drilling fluids, drilling pits used for more than three well and pits at centralized E&P waste management facilities and Class II Injection well sites). Updated liner specifications are also provided in the draft rule; the use of a constructed soil liner has been eliminated, the type of synthetic liner material and thickness have been updated and the proposed rules also require liners be constructed, installed and maintained following manufacturers specifications.

Pit lining decisions for production pits will require that oil and gas operators to demonstrate to the Director that the produced water is equivalent to or better than that of the underlying aquifer or the operator can clearly demonstrate by substantial evidence that seepage will not reach underlying aquifers or waters of the state at contamination levels in excess of applicable standards.

Rule 904 currently does not require that operators provide evidence demonstrating that an unlined production pit will not impact ground water and the current rule also does not require that operators address potential surface water impacts. The current *environmentally sensitive area decision tree* is not sufficient to cover the wide range of geologic and hydro-geologic settings where oil and gas operations occur. To protect ground water and surface water resources a more thorough review of potential adverse impacts and updated pit lining requirements and specifications are needed.

The current pit lining rules were written and adopted in 1995, before the use of drilling multiple wells from one pad had become a standard industry practice throughout much of the state, as such; they do not address certain environmental concerns that arise from increased loading from E&P waste including hydrocarbon concentrations. In addition skim pits that were constructed before July 1, 1995 have

been grandfathered in and are not required to be lined. These unlined skim pits have the potential to impact water resources and wildlife.

Drilling, completion, and production pits are being constructed in more rugged terrain, at higher elevations, and in proximity to surface water resources. Recent failures of pit liners and subsequent release to the environment of contained fluids are examples of the need to update and improve the pit lining requirements. With the continued expansion of urban areas into agricultural, range, and forest lands and the spread of rural residential development, there are ever increasing opportunities for the public to come into contact with impacted soils and oily residues in and around these pits.

Reuse and recycling of E&P waste has been encouraged as a way to minimize waste; however, with the increase of drilling activity, operators are reusing and recycling drilling, flow back fluids, and produced water at unprecedented levels. Oil and gas operations are using pits, that were permitted as production pits or drilling pits that were not required to be permitted, to store these fluids prior to use at another location. Current COGCC rules do not specifically address this type of pit.

Operators are also permitting more centralized E&P waste management facilities and Class II injections wells to handle the increasing volume of these materials. The pit lining requirements for these types of facilities need to be updated to current industry standards and to ensure they are protective of public health, safety, welfare, and the environment including wildlife and water resources.

Authority for this proposed rule is included in C.R.S. 34-60-105, 34-60-160(2)(d), 34-60-106(11) and 34-60-128.

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

The beneficiaries of the proposed rule include (i) consumers that use public water supplies located in oil and gas exploration and production areas, (ii) the general public that uses ground water for domestic water supply, (iii) agricultural interests that use surface water and ground water for livestock watering, (iv) agricultural interests that irrigate with surface water or ground water that could be impacted by oil field fluids, and (v) natural resources including wildlife, soils and vegetation that could be adversely impacted by contact with oil field fluids or products contained in oil field fluids.

Oil and gas operators will also benefit from these proposed regulations due to a reduction in site investigation and remediation costs at production pit sites where surface water, ground water or natural resources have been adversely impacted.

The COGCC and CDPHE will benefit from the additional demonstration requirements by developing a better understanding of the hydrogeologic of proposed pit locations which will allow for better decision making, problem solving and regulatory compliance. The COGCC will be ensuring that its responsibilities as an implementing agency under SB-181 are fully met.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

The parties projected to incur costs associate with this proposed rule include; Oil and gas operators that permit centralized waste management facilities and Class II Injection wells that require pits for handling fluids, Operators that use a drilling fluids with a hydrocarbon content 10,000 ppm or greater, and or chlorides concentration of 15,000 ppm or greater, operators with unlined skim pits, oil and gas operators that manage exploration and production waste in unlined pits.

Oil and gas operators will have to demonstrate to the Director that the produced water is equivalent to or better than that of the underlying aquifer or the operator can clearly demonstrate by substantial evidence that seepage will not reach underlying aquifers or waters of the sate at contamination levels in excess of applicable standards. In areas where this demonstration can not be oil field pits will be required to be lined. Additionally, skim pits, regardless of the date of construction, drilling pits used for more than three wells, water storage pits used to contain recycled or reused produced water and drilling fluids and pits are centralized E&P waste management facilities and Class II UIC facilities will be required to be lined.

The demonstration costs have been estimated to be \$440/site. The costs to line a pit using the revised specification were estimated to be \$30,285.

The COGCC will incur minor expenses to implement and enforce the proposed revisions to Rule 904. Expected costs include the cost to review the demonstration data, review pit liner specification data and to field inspection time to review the additional liner specifications.

This rule is expected to have minimal impact on economic competitiveness, job creation, or state revenues.

- 4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

The proposed rules have no requirements that are specific to small businesses or to a particular geographic region. The rule is therefore not expected to have more than a minimal impact on small businesses, consumers, or private markets.

- 5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

If no action is taken drilling, flow back and stimulation fluids, drilling mud and produced water may percolate through the subsurface causing impacts to ground water and surface waters resources that may be source waters for public water supply or cause general degradation of groundwater quality thereby reducing potential for future use. A degradation of water quality can also impact wildlife that may be exposed to chemicals or other toxic waste from the oil field fluids.

Another option considered was a voluntary program. However, prudent management of E&P waste is not a voluntary program. The proposed rule is preferred to a voluntary standard because an oil and gas operator would have no incentive to incur costs of compliance when the benefits of compliance accrue to the public at large.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 905. (amended) CLOSURE OF PITS AND BURIED OR PARTIALLY BURIED PRODUCED WATER VESSELS

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)] and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

The current rules need to be updated and revised to address new issues related to closure of buried or partially buried produced water vessels and pits, including unlined drilling pits, and the disposal of synthetic pit liners. The need for these changes has arisen as a result of the high levels of oil and gas activity in the state, changing demographics, and to bring COGCC regulations into agreement with other solid waste disposal regulations.

Rule 905.a. - The current rules require operators to ensure that when lined pits and buried or partially buried produced water vessels are closed that the remaining soils and ground water meet Table 910-1 standards, but they do not require operators to submit Site Investigation/Remediation Workplan Form 27 unless ground water has been impacted. Many of the older lined pits and buried or partially buried produced water vessels have leaked, thus the need for their removal and remediation. The COGCC does not have a mechanism for tracking the closure of these or a method to ensure that the operators are complying with the cleanup standards.

Rule 905.a.(3) - Pit liners are not exempt E&P waste; however, the current rules allow the burial of synthetic pit liners on non-irrigated cropland and on non-crop, with land owner approval, which may be a violation of applicable state, federal, or local government solid waste disposal regulations.

Rule 905.c. - The current rules do not require operators to demonstrate that Table 910-1 clean-up standards have been met during the closure and reclamation of unlined drilling pits. Drilling mud reserve pits sometimes contain residual petroleum hydrocarbons. Improper closure may pose a threat to the environment.

Authority for these rule revisions are C.R.S. §34-60-105, C.R.S. §34-60-106(2)(d), and C.R.S. §34-60-106(11).

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*

b) an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]

Surface owners, local communities and the general public are expected to benefit from the proposed rule changes.

Rule 905.a. - The proposed changes to this rule would require that a Form 27 - Site Investigation/Remediation Workplan for the closure of buried or partially buried produced water vessels be submitted by the operator for approval. This would provide the COGCC with a mechanism for tracking the closure of these and a method to ensure that the operators are complying with the cleanup standards. This would be similar to cleanup requirements from other sources of E&P waste.

By requiring operators to prepare and submit for approval a Form 27 for the closure of buried or partially buried produced water vessels, the COGCC can ensure that operators are taking appropriate actions to remediate impacts and to ensure that remaining soil and ground water meet the Table 910-1 standards. The proposed Table 910-1 standards will allow for unrestricted future use of the property and will be protective of water quality.

Rule 905.a.(3) - The proposed change would require synthetic liners to be removed and disposed in accordance with applicable local, state, or federal solid waste disposal regulations. This rule revision ensures consistent treatment of solid wastes throughout the COGCC rules and regulations.

Rule 905.c. - By requiring operators to close and reclaim unlined drilling pits in accordance with the 1000 Series rules and to ensure that soils and ground water meet the allowable concentrations and levels in Table 910-1 the COGCC will be ensuring that future uses of the land and water quality are protected.

The proposed rule may provide new business opportunities for and have a positive financial impact on third party contractors, such as environmental consultants, service companies, analytical laboratories, waste management contractors.

3) Please provide

- a) a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

905.a. - Any operator that plugs and abandons an oil and gas well and closes an associated tank battery that contains a buried or partially buried produced water vault will be subject to this proposed rule. Therefore, oil and gas operators are expected to incur

costs as a result of the collection of samples, analytical costs, and the preparation and submittal of Form 27s. The regulatory agency will also incur some costs associated with the processing and approval of submitted Form 27s.

905.a.(3) – Any operator that has a drilling mud reserve pit with a synthetic liner will be required to remove the liner for offsite disposal at an authorized facility. Therefore, oil and gas operators are expected to incur costs as a result of the proposed rule. The regulatory agency should not incur any direct costs.

905.c. – Any operator that has an unlined drilling mud reserve pit will be required upon closure to ensure that soils and ground water meet the allowable concentrations and levels in Table 910-1. Therefore, oil and gas operators are expected to incur costs as a result of the proposed rule. The regulatory agency should not incur any direct costs.

COGCC 905.a. - Additional COGCC staff time would be required. On average, approximately 137 wells are plugged and abandoned each year. Assuming that there was a buried or partially buried produced water vault at each of the associated tank batteries, then 137 Forms 27s would be submitted to the COGCC annually. Each Form 27 submittal would require data entry, EPS review and approval, data processing, and file management. The total cost incurred by COGCC annually would be \$7,200.

O&G Operators 905.a. – Operators would be required to collect a representative soil sample upon closure of a buried or partially buried produced water vault for laboratory analyses and submit the results with a Form 27. Cost to industry would be approximately \$475 per site. This is estimated on one soil sample per site with laboratory analyses consisting of Total Petroleum Hydrocarbons, Sodium Adsorption Ratio, Electrical Conductivity, and pH.

COGCC 905.a.(3) – No costs should be directly incurred by the regulatory agency.

O&G Operators 905.a.(3) – Operators will no longer be allowed to leave synthetic liner in place on non-crop land with surface owner approval. This is a violation of the CDPHE Solid Waste regulations. The estimated cost incurred by industry for disposal would be approximately \$900 per liner.

COGCC 905.c. – No costs should be directly incurred by the regulatory agency.

O&G Operators 905.c. - Operators would be required to ensure that soils and ground water meet the allowable concentrations and levels in Table 910-1 upon closure of unlined drilling mud reserve pits. This would require the collection of a representative sample for laboratory analyses. The estimated cost incurred by industry would be approximately \$400 per pit for analytical costs.

This rule is expected to have minimal impact on economic competitiveness, job creation, or state revenues.

- 4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

The same requirements would apply to both large and small entities in all geographic regions.

The rule is therefore not expected to have more than a minimal impact on small businesses, consumers, or private markets.

- 5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

Maintaining the status quo could result in a number of sites being closed where operators did not ensure that soil and ground water met the allowable concentrations and levels in Table 910-1.

Prudent management of E&P waste is not a voluntary program. The proposed rule is preferred to a voluntary standard because an oil and gas operator would have no incentive to incur costs of compliance when the benefits of compliance accrue to the public at large.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 906 (amended) – SPILLS AND RELEASES

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)]
and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

The proposed change would require operators that report in writing (Form 19) spills/releases exceeding five (5) barrels contained within a berm, regardless of whether the berm is lined or unlined.

The proposed change clarifies that in addition to making a verbal report, operators must also submit a written report (Form 19) to the Director within ten(10) days after discovery for spills/releases that exceed twenty (20) barrels or those of any size that impact or threaten to impact waters of the state, residence or occupied structure, livestock or public byway.

The proposed charge would require that a topographic map be included as part of the written report (Form 19) from the operator to the Director. A topographic map is needed during the review of the report to aid COGCC staff in their evaluation of the potential for a spill to impact water resources, public health, safety, welfare, and the environment.

The proposed rule provides a toll-free telephone number for the Environmental Release/Incident hotline for operators use in reporting spills/releases that impacts or threatens to impact surface water to CDPHE. The proposed rule would require operators to report spills/releases that impacts or threatens to impact a public drinking waster supply intake verbally to the emergency contact for that facility immediately after discovery.

The proposed charge would require that operators notify the surface owner or the owner's appointed tenant of reportable spills within 24 hours of discovery of the spill.

The proposed change would expand spill/release prevention by clarifying that operators must construct or install secondary containment around all produced water tanks, that all secondary containment structures be sufficiently impervious to contain the spilled/released material, and to protect materials, chemicals, and products from stormwater and precipitation.

2) *Please provide*

- a) a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

Parties expected to benefit from the proposed changes to the rule include surface owners and their appointed tenants and the COGCC.

Current rule specifies that spills/release exceeding five (5) barrels, including those contained within unlined berms must be reported in writing (Form 19), but the rule does not require a written report (Form 19) for spills contained within lined berms. Although most operators do submit a written report (Form 19) for spills/releases of this size that are contained in lined berms, not all do. Spills of this size, even if they are contained within a lined berm still pose a potential threat to public health, safety, welfare, and the environment, including wildlife and surface water resources and need to be tracked by the COGCC to ensure proper and timely remediation.

Current rule does not clearly state that in addition to spills/releases being reported verbally to the COGCC Director, i.e., those that exceed twenty (20) barrels or those of any size that impact or threaten to impact waters of the state, residence or occupied structure, livestock or public byway, must also be reported in writing (Form 19). Although most operators do submit a written report (Form 19), not all do unless a specific request is made by COGCC staff.

Current rule does not specify that a topographic showing the location of the spill/release be included with the Form 19; therefore staff may not accurately locate the site of the spill/release or be able to evaluate the potential for a spill/release to impact water resources. In addition, staff must use additional time to make special requests to operators to provide an accurate location map.

Although the Spill/Release Report (Form 19) provides a place where the operator can list other parties and agencies notified, the current rule does not specifically require operators to notify the Colorado Department of Public Health and Environment about spills/releases that impacts or threatens to impact any surface waters nor does it require operators to notify a public drinking water supply when a spill/release impacts or threatens to impact it's surface water intake.

Current rule does not require the operator to notify the surface owner or the owner's appointed tenant of reportable spills. Although operators frequently do notify the surface owner or the owner's appointed tenant, not all do. As a result, surface owners and tenants may happen to come upon spills/releases about which they have not been notified. They then contact staff to voice their concerns about impacts from spills/releases and the thoroughness of the remediation activities. This unnecessary aggravation of the surface owner and tenants often could be avoided if the operator had notified them of the incident and their plans for mitigating the impacts and remediating the site.

Current rule does not require containment around tanks containing produced water if the total dissolved solids (TDS) of the water are less than 10,000 mg/l. Spills/releases from storage tanks of produced water, regardless of the TDS of the water, have the potential to impact soils, surface water and ground water unless properly contained and promptly remediated.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

This rule is expected to have a minimal cost impact on the regulated community, economic competitiveness, job creation, agencies responsible for implementation and enforcement and state revenues.

This rule is expected to have minimal impact on economic competitiveness, job creation, or state revenues.

- 4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

The proposed changes would apply to all operators regardless of size or geographic region and is not expected to have more than a minimal impact on small business, consumers, or private markets.

- 5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

No action alternative: The no action alternative would result in the continued use of a rule that staff and many operators believe is confusing and that does not require operators to notify surface owners or owner's appointed tenant of reportable spills and releases. Most operators already equip their produced water tanks with secondary containment as required by EP's Spill Prevention, Control, and Countermeasure Space Plans, except perhaps those associated with dry gas production. Therefore, some produced water tanks containing water of less than 10,000 mg/L TDS might not to have secondary containment. In addition, some of the proposed changes to the rule are intended to clarify the pit permitting or reporting requirements and do not contain significant additional regulatory requirements.

Voluntary standards: Prudent management of E&P waste is not a voluntary program. The proposed changes are preferred to a voluntary standard because an oil and gas producer would have no incentive to incur costs of compliance when the benefits of compliance accrue to the public at large.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 907.a.b. (amended) - GENERAL REQUIREMENTS AND TRANSPORTATION

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)] and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

The proposed rules are primarily clarifications and minor internal process changes.

Proposed Rule 907.a.(3) provides for an internal COGCC process for tracking written waste management plans that are submitted for beneficial use, reuse or recycling of E&P wastes. The submittal of the Form 4 with the written waste management plan follows current COGCC database management processes. The proposed rule also provides a clarification that the plan has to describe, at a minimum, the type(s) of waste included in the plan. Proposed rule 907.b.(1) includes a editorial change to include the formal name of the Colorado Department of Public Health and Environment. This rule also includes a clarifies that waste transported out of state for treatment for disposal shall be transported to facilities authorized or permitted by an appropriate regulatory agency. Proposed rule 907.b. (2) is proposed to make the record keeping requirement for waste generators consistent with Rule 205 which describes record keeping for oil and gas operators.

Authority for this proposed rule is included in C.R.S. 34-60-105, 34-60-160(2)(d) and 34-60-106(11).

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

Beneficiaries of the subject rule include general public, local environmental and health agencies and the COGCC and CDPHE. The oil and gas industry may also receive a small benefit in new rule.

Proper tracking and documentation of waste management practices is important to protect public health, safety and welfare, and the environment. The proposed internal tacking process will increase efficiencies within the COGCC in terms of document management and waste management. Tracking and documentation is also important for identify waste generation and disposal trends and to improve waste management processes.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

The COGCC will incur costs to enter the Form and to review and file the waste management plan. These annual costs have been estimated to be \$3200

Data Specialist:	1.0 hour per week at \$16.50 per hour
EPS II	0.5 hours pr week at \$ 36.60 per hour
EPS III	0.25 hours per week at \$42.88 per hour
IT I	0.5 hours per week at \$32.05 per hour

The oil and gas industry will incur trivial costs to fill out a Form 4 Sundry Notice and attach it to a submitted Waste Management Plan.

This rule is expected to have minimal impact on economic competitiveness, job creation, or state revenues.

4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

The amended rules apply to all areas of the state and all entities on an equal basis. Adverse impact to small businesses, consumers, or private markets is not anticipated.

5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

The proposed rules are primarily clarifications and modifications to make COGCC rules consistent for the regulated community and to improve efficiencies within the COGCC therefore alternative approaches were not considered.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended): 907.c.(2)Ei (amended) - PRODUCED WATER

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)]
and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

In cases where produced water is disposed of under a Colorado Discharge Permit System (CDPS) permit operators will have to provide to the COGCC the discharge permit number, latitude and longitude data and wells included, per outfall location, in the discharge permit. This data will be added to COGIS MapGuide layer.

The discharge of produced water under the Colorado Discharge Permit System (CDPS), administered by the Water Quality Control Division (WQCD) is one of the methods allowed for disposal of produced water under current COGCC rules. In some cases the produced water is first managed in a COGCC permitted production pit. The CDPS program does not require that permitted outfalls be marked or labeled and currently there is no system in place for COGCC staff to identify wells associated with each outfall. During field inspections or in response to complaints from surface owners about water being discharged from pits or other conveyances into waterways is difficult and extremely time consuming for COGCC staff to identify if a non-compliance condition exists which limits the staff's ability to respond to complainants and conduct field inspections.

Authority for this proposed rule is included in C.R.S. 34-60-105 and 34-60-160(2)(d).

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

The general public and the COGCC and CDPHE will benefit from this regulation.

The general public will benefit by receiving information and an understanding of how produced water is managed and monitored. Residents and visitors to areas where discharges occur can use the location information to request additional water quality data from the CDPHE.

Oil and gas operators that discharge produced water under a CDPS permit

Continued concern from citizens that discharge of produced water is not regulated within the state of Colorado and continued inefficient use of COGCC staff time. COGCC staff time will be used more efficiently when collecting field data and addressing citizen concerns. Citizens can review COGCC website for permitted outfall is they have concerns about an observed discharge.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

The COGCC will incur minor costs as a consequence of this proposed rule. The annual estimated cost to manage the submitted data is \$610.43 which includes labor for a data specialist, Environmental Protection Specialist II and IT Professional III. Labor rates are based on actually current salaries or contracts.

Labor Category	Hours	
Data Specialist I		\$247.41
Environmental Prot. Specialist II	5	\$183.64
IT Professional III	5	\$179.37
		\$610.43

The costs for the oil and gas operators is minor; an oil and gas operator that has a CDPS permit or who is in the process of obtaining the permit will have the data necessary to comply with this rule. Simply forwarding the data to other agencies was not considered as a significant cost.

This rule is expected to have minimal impact on economic competitiveness, job creation, or state revenues.

4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

The proposed rule will not have an adverse impact on small business, consumers, private markets, or particular geographic regions. It applies to operators that have made a business and environmental management decision to discharge produced water under the CDPS system.

5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

The COGCC considered taking no action on this topic and also considered making the proposal voluntary. However, with the no action was dropped because the benefits far out way the trivial costs. The voluntary option was also dropped because full compliance is needed to provide the maximum benefit to the public and the regulatory agencies.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) Subject: 907.d (3) (amended) - Drilling Fluids

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)] and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

Proposed Rule 907.d addresses management of drilling fluids which are an exploration and production waste. Senate Bill 95-017 granted exclusive jurisdiction to the Colorado Oil and Gas Conservation to manage E&P Waste. Proposed Rule 907.d will require that drilling fluids be sampled if the operator chooses to bury them on site, contains a requirement that drilling fluids, used as a soil amendment, be worked into the native soil within 10 days and will require that operators maintain a record of the source, volume and location where the land application occurred.

Mismanagement of drilling mud at one of these sites caused an impact to the Cache La Poudre River in Weld County. At this site, drilling mud from two operators was being disposed at a property adjacent to the Cache La Poudre River where there was no indication that the fluids were to be used as a soil amendment. Overloading of drilling mud at the site caused a small volume to overflow into the river. Laboratory results of a drilling mud sample collected at this site indicated residual petroleum hydrocarbons. Currently there are no soil sampling requirements for drilling pit closures.

Currently, drilling fluids can be dried and buried onsite without ensuring that allowable soil concentrations and levels (Table 910-1) are met. Drilling fluids may contain residual hydrocarbons and certain drilling fluids may also contain other products that have potential to adversely impact public health, safety and welfare, the environment and wildlife.

Enforcement of the violations has been hindered by a lack of information about where and when the waste was generated. Operators frequently contract for drilling mud disposal and do not track where it is taken and how it is managed.

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

The beneficiaries of the proposed rule are the general public and local and state environmental and health agencies.

The proposed changes to Rule 907.d. should result in better E&P waste management practices by industry and their contractors thereby reducing adverse environmental impacts public health safety and welfare the environment and wildlife resources. The sampling requirement will ensure that residual hydrocarbons, that could impact groundwater or surface water, will not be buried onsite. The requirement operators to maintain a record of the source, volume and location where the land application of the water based bentonitic drilling fluids occurred will force operators to track and provide oversight of contractors that are handling the operators drilling fluids. This requirement with the stipulation that land applied drilling fluids be worked into the native soils within 10 days will reduce illegal dumping of drilling fluids and will decrease potential for drilling fluids overloaded onto surface to runoff impact surface waters.

The proposed rule should reduce adverse impacts on public health safety and welfare and the environment which should provide a reduce the amount of time that local environmental and health agencies and the COGCC and CDPHE spend investigating, tracking and responding to releases or drilling fluids.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

Oil and gas operators and oil field service contractors may incur costs as a consequence of this proposed rule.

Operators that choose to bury drilling fluids onsite or place the material as a soil amendment will be required to sample the material to ensure that the Allowable Soil Concentrations and Limits listed in Table 910 are met. The cost to sample and analyze the material is estimated to be \$350 for each drilling pit closure or onsite application. The proposed regulation also requires that drilling fluid generation and management of drilling fluids be tracked. The estimated costs to design and implement a tracking program for one operator is \$2364. Total annual costs for design, implementation, one year of tracking, and one year of sampling (50 samples) is estimated to be \$19,864. Please see the attached spreadsheet for additional cost estimating data.

Costs incurred by the COGCC should be minor and will include data entry of soil analytical data and additional time spent field inspectors or EPS to review waste tacking

systems. However, the review of the tracking system should only occur if a waste management problem is noted or observed. These costs will be offset by the reduction in staff time required to investigate complaints, releases and adverse impacts.

This rule is expected to have minimal impact on economic competitiveness, job creation, or state revenues.

- 4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

The rule has not specific requirements that apply to the size of an entity or the geographic region that a company operates in.

The rule is therefore not expected to have more than a minimal impact on small businesses, consumers, or private markets.

- 5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

The alternative approaches that were considered included taking no action and having compliance with the program be voluntary. However, the potential for adverse impacts to public, health, safety and welfare and the environment and wildlife resources is high. The COGCC has an obligation, under Senate Bill 95-017 to managed E&P wastes in a manner that is protective public, health, safety and welfare and the environment and wildlife resources, therefore, this more prescriptive program was developed and proposed.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule Title (new/amended): 907.e (amended) and 907.f. (new) - OILY WASTE AND OTHER E&P WASTES

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)] and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

Associated gas plant and gathering waste along work over fluids, pipeline pigging waste and tank bottoms have been deleted from rule 907.e. and are now covered in Proposed Rule 907.f Other E&P Waste. This rule provides management and disposal options for these wastes which includes commercial disposal or land treatment at a permitted centralized waste management facility (CWMF).

The associated wastes could include gas plant sweetening waste including amines, amine filters, amine filter media, precipitated amine sludge, iron sponge and hydrogen scrubber liquid and sludge. It could also include spent activated carbon, pipe scale and tank bottoms. Several of these wastes such as iron sponge, amine filters and activated carbon have potential to be ignitable (spontaneously combust). Pigging waste can contain pipe scale and sediment. Tank bottoms, according the EPA's *January 2000 Associated Waste Report on Tank Bottoms and Associated Waste* (<http://www.epa.gov/epaoswer/other/oil/execrep.htm>), can exhibit toxicity for heavy metals such as lead. The potentially high levels of paraffin, wax and heavier end hydrocarbons also reduces the potential for successful land treatment. A study conducted in the Williston Basin indicated that paraffin may restrict water infiltration. *See Planting Crops on Land Spread Tank Bottoms: A Possible Disposal Solution, Petroleum Technology Transfer Council* (<http://www.p2pays.org/ref/15/14764.pdf>).

Authority for this proposed rule is included in C.R.S. 34-60-105, 34-60-160(2)(d) and 34-60-106(11).

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

Beneficiaries of the subject rule include general public, local environmental and health agencies and the COGCC and CDPHE. The oil and gas industry may also have small benefit in new rule.

Associated wastes that are not amenable to land treatment will be taken to a permitted facility that has additional environmental oversight. The additional oversight or monitoring requirements will ensure that adverse impacts to public health, safety and welfare and the environment are avoided or minimized.

State and local agencies will benefit through a reduced work load. Current staff can focus more on monitoring, pollution prevention and public outreach.

Oil and gas operators will be encouraged to develop and or maintain recycling policies and programs. Oily waste such as tank bottoms will be reclaimed generating additional natural resources. Waste minimization programs can reduce overall operating costs resulting in a financial benefit for oil and gas companies.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

This rule is expected to have minimal impact on economic competitiveness, job creation, or state revenues, or government costs.

4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

The proposed regulations contain the same requirements for entities regardless of size or geographic location. Smaller operators that operate in the Eastern Plains that are remote from oil reclaimers and recyclers who have routinely placed oily tank bottoms on secondary containment berms or lease roads may incur additional waste management expenses. However, these operators may benefit from developing an oil reclamation process. Impact on consumers, sales, employment or tax revenue is not anticipated.

The rule is therefore not expected to have more than a minimal impact on small businesses, private markets, or particular geographic regions.

5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

The proper management of exploration and production waste is required under federal and state statute and public health, safety and welfare, the environment and wildlife resources will be adversely impacted by mismanagement of associated wastes, tank bottoms, and pigging wastes. Therefore this proposed rule is prescriptive. Market based alternatives and voluntary standards will not meet requirements of federal and state requirements and the COGCC specific obligation to management E&P waste outlined in SB 95-071. However, operators are encouraged and do currently participate in waste reduction and recycling programs.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 908 (amended) CENTRALIZED E&P WASTE
MANAGEMENT FACILITIES

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)]
and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

Rule 908. sets forth the permit application, operation, and closure requirements for non-commercial, centralized E&P waste management facilities for the treatment, disposal, recycling or beneficial reuse of E&P wastes that is generated exclusively by one operator.

Rule 908.a. currently states that an operator of a centralized E&P waste management facility can not accept E&P waste from oil and gas operations other than its own *'except as part of a unitized area or joint operating agreement or in response to an emergency'*. Perceived problems with this language are as follows: 1) In a *'unitized area'* the ownership is made common by a unit agreement and a designated operator is assigned; 2) Centralized E&P waste management facilities created under a *'joint operating agreement'* could result in E&P wastes from numerous operators being managed at one facility. Management of the E&P wastes from multiple operators could become extremely complicated and burdensome for regulatory oversight and compliance enforcement; and, 3) *'in response to an emergency'* lends itself to loopholes. For example, COGCC staff may not agree with an operator's definition of an emergency and would not necessarily be consulted prior to the use of the facility for emergency purposes.

Rule 908.b.(7) currently has a general listing of permit requirements for facility design and engineering. Insufficient information could be submitted with a permit application potentially resulting in a denial of the permit application and a delay in the proposed project.

Rule 908.b.(8) currently has no requirement to address noise or odor mitigation in the operating plan.

Rule 908.b.(9) currently does not have a requirement to sample surrounding water wells for baseline water quality parameters. Additionally, there are no requirements for surface water sampling and/or monitoring.

Rule 908.f. currently states that the facility shall be subject to an annual review. There is no requirement to report the types and volumes of waste handled at a centralized facility.

Rule 908.g. currently requires a preliminary closure plan to be submitted with the permit application. There is no guidance of what information should be provided.

Rule 908.h. currently states that operators shall provide to the Director copies of notifications to local governments or other agencies. It does not require operators to provide verification of approval from local governments or other agencies.

Authority for the proposed revisions to this rule is included in C.R.S. §34-60-105, §34-60-160(2)(d), §34-60-106(11).

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

Local communities, the general public, and state and local agencies are expected to benefit from the proposed changes to this rule.

The proposed changes to Rule 908.a. would eliminate language that is misleading. A Rule 502.b. variance to this part of the rule could be requested. Likewise, COGCC staff could be consulted and advised should an operator have a valid emergency situation.

The proposed changes to Rule 908.b.(7) contain additional information requirements to assist in characterizing the site, such as geologic and hydrologic data. These data will be reviewed by staff and used in their evaluation of the permit application.

The proposed change to Rule 908.b.(8) will require noise and odor mitigation as part of the operating plan, thereby reducing community impact and regulatory staff time to respond to complaints.

The proposed changes to Rule 908.b.(9) set forth water well sampling and analysis criteria. Additionally, new Rule 908.b.(10) requires surface water monitoring where applicable. These requirements will provide data to help determine if operations at these facilities have impacted surface or ground water.

The proposed changes to Rule 908.f. require submittal of an annual report by the operator which includes the types and volumes of waste handled at the facility. Such information would then be verified by COGCC staff if necessary.

The proposed changes to Rule 908.g. contain information that should be included in the preliminary closure plan. Additionally, information required in the final closure plan is also addressed.

The proposed change to Rule 908.h. requires operators to provide verification of approval from local governments or other agencies thereby reducing regulatory staff time required to verify such approvals.

The proposed rule may provide new business opportunities for and have a positive financial impact on third party contractors, such as environmental consultants, service companies, analytical laboratories, waste management contractors.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

Oil and gas operators and regulatory agencies are expected to incur some costs as a consequence of the revisions to this rule.

COGCC - There will be additional review time by environmental and engineering staff. Since 2001, there have been a total of ten (10) centralized facilities permitted. Therefore, assume that there would be two permit applications per year. Each Form 28 submittal would require data entry, EPS and PE review and approval, onsite inspection, data processing, ongoing review of monitoring data, and file management. The estimated costs incurred by COGCC would be \$700 for each permit application.

Oil and Gas Operators - Additional requirements include detailed information regarding facility design and engineering, water well sampling within a one mile radius of the proposed facility, a preliminary closure plan, and a cost estimate for closure by a third party consultant. As an example, there are four centralized E&P waste management facilities in Weld County. There is an average of 18 permitted water wells within a one mile radius of each facility. For cost estimation purposes, 18 water wells was used at a sampling cost of \$1,000 per water well. Additionally, third party consultation was estimated at a flat rate of \$5,000 per site. Based on these criteria, the additional cost to industry is estimated at approximately \$27,500 per facility.

This rule is expected to have a minimal impact on the economy, economic competitiveness, job creation, and anticipated effect on state revenues.

- 4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

There have been a total of twenty-five (25) centralized E&P waste management facilities that have been permitted with the COGCC. At least twenty-one (21) facilities are presumed to be active and operating. The oil and gas producers that have permitted centralized E&P waste management facilities operate from 36 wells to 4,900 wells in Colorado.

This rule is expected to have a minimal impact on small businesses, consumers, private markets, and / or particular geographic regions.

- 5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

The no action alternative could result in a delay in permit approval due to staff's inability to conduct a timely review because of insufficient data. This alternative was therefore not selected.

A voluntary standard would not implement the rule objective because the parties benefiting from the absence of standards and incurring the cost of the proposed standard would not have an incentive to employ the standards as the benefits are expected to accrue to the public at large.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 910 (amended) – ALLOWABLE CONCENTRATIONS AND SAMPLING FOR SOIL AND GROUND WATER; Table 910-1(amended) – ALLOWABLE CONCENTRATIONS AND LEVELS.

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)] and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

Rule 910 addresses the clean up standards for ground water and soils impacted by exploration and production (E&P) wastes. The proposed changes to Table 910-1 would make the soil standards consistent with those used by CDPHE – HMWMD and Solid Waste unit for clean up of impacts to soil from similar materials.

The proposed standards would allow for unrestricted future use of the property and would be better protective of water quality.

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

Parties expected to benefit from the proposed changes to the rule include current and future surface owners and their appointed tenants, the general public, and the COGCC.

Currently the clean up standards for impacted soils used by the COGCC for oil and gas operations are different than those used by Colorado Department of Public Health and Environment (CDPHE) – Hazardous Materials and Waste Management Division (HMWMD) and Solid Waste unit for other industries. The rapid spread of rural residential development and expansion of urban areas contributes to changes in land use from agricultural, rangeland, and forest to residential and commercial. Current soil cleanup standards that were adequate for the original land use may not be protective of the new and future uses.

The COGCC is the implementing agency for ground water standards and classifications set by the Colorado Department of Public Health and Environment (CDPHE) – Water Quality Control Commission (WQCC). COGCC’s current cleanup standards for soils

may not be comprehensive enough to be protective of ground water quality by limiting leaching potential.

The current Rule 910 and Table 910-1 clean up standards for ground water are those set by the WQCC. The COGCC is not proposing to change the ground water standards.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

This rule is not expected to have more than a minimal impact on the COGCC, economic competitiveness, job creation, or state revenues.

It is estimated that operators may incur additional costs to demonstrate that cleanup standards are met. The following table presents the estimated costs for parameters that may require analysis. Operators would also incur the cost for collecting the samples.

Matirx	Table 910-1 parameters	estimated costs
water	BTEX in ground water	\$ 35.00
	Inorganics in ground water	
water	TDS	\$ 10.00
water	Chloride	\$ 15.00
water	Sulfate	\$ 15.00
water	Liquid hydrocarbons in water (visual inspection) as done for NPDES	free
	Organic compounds in soil	
soil	TPH (volatile and extractable)	\$ 70.00
soil	PAH by 8270 SIM	\$ 200.00
	Inorganics in Soil	
soil	EC, SAR, pH	\$ 25.00
	Metals in Soil	
soil	Cr (VI)	\$ 35.00

soil	Cr (III) as difference between total Cr in group below)	
soil	The rest (As, Ba, Bo, Cd, Cu, Pb, Hg, Ni, Se, Ag, Zn) as a group	\$ 125.00
soil	Liquid hydrocarbons in soil (visual inspection)	free

4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

The proposed changes would apply to all operators regardless of size. This rule is not expected to have more than a minimal impact on small business, consumers, or private markets.

5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

No action alternative: The no action alternative would result in the continued use of cleanup standards that are inconsistent with those imposed by CDPHE-HMWMD on other industries for remediation of soils impacted by similar wastes.

Voluntary standards: Prudent management of E&P waste is not a voluntary program. The proposed changes are preferred to a voluntary standard because an oil and gas producer would have no incentive to incur costs of compliance when the benefits of compliance accrue to the public at large. Nonetheless, many operators routinely cleanup impacted soils to concentrations at or below the proposed standards, so the proposed changes would merely make all operators conduct remediation in this responsible manner.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 912 (amended) VENTING AND FLARING OF NATURAL GAS

1) *Please provide*

- a) *a description of the proposed rule;*
- b) *a description of the motivation for the proposed rule; and*
- c) *a reference to the statute(s) providing authority for the proposed rule*

Proposed rule 912.d. would require that flared gas be directed to a combustion device capable of 95 % destruction efficiency. Currently field flares have lower destruction efficiencies (62-84% San Juan Basin Air Quality Task Force Draft Report). Inefficient burning may produce soot and a number of hydrocarbon by-products that include highly reactive volatile organic compounds (VOCs) and polyaromatic hydrocarbons (PAH).

Currently, COGCC Rule 912 provides requirements for venting or flaring of natural gas. However, these requirements include a prohibition of unnecessary venting, and notice and record keeping requirements. Depending on the composition of the natural gas the venting process may release hydrocarbons such as ethane, propane, butane, pentane and hexane, into the atmosphere. Natural gas may also contain the EPA-designated Hazardous Air Pollutants (HAPs) benzene, toluene, ethyl benzene and xylenes (BTEX). HAPS can account for 0.3 - 0.6 % of the natural gas composition. Natural gas may also contain nitrogen, carbon dioxide or sulfur compounds, such as hydrogen sulfide (H₂S). Flaring or venting is often required during well completions for two main reasons: (1) the initial gas and liquids produced by most wells does not meet the gas gatherer's quality requirements, and (2) the flare is the primary safety device in the event of encountering overpressure or equipment failure. (*Four Corners Air Quality Task Force Draft Report*).

Authority for this proposed rule is included in C.R.S. 34-60-105, 34-60-160(2)(d), and 34-60-106(11).

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed and*
- b) *an assessment of the benefits expected to accrue to those parties.*

The parties that are expected to benefit from the proposed rule are the general public and local communities in proximity to active oil and gas drilling operations. Flaring is used as a means of converting natural gas constituents into less hazardous and atmospherically reactive compounds. A combustion device with high destruction efficiency converts hydrocarbons and sulfur compounds to relatively innocuous gases such as CO₂, SO₂, and H₂O, which will reduce emissions to the atmosphere and potential adverse impacts on

public health, safety and welfare and the environment. The reduction in human exposure to pollutants that have recognized associations to adverse health impacts, at the individual or population level, is considered to be a direct public health and safety benefit.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues.*

Oil and gas operators actively drilling oil and gas wells where flaring is required because the initial gas and liquids produced does not meet the gas gatherer's quality requirements, and/or the well is sent to flare as a safety process (in the event of encountering overpressure or equipment failure) will incur costs to purchase, maintain and operate the high destruction efficiency combustors. The COGCC will incur minor costs for additional inspection hours to enforce this rule.

Estimated initial compliance cost for the industry is \$2,000,000. Annual equipment replacement costs following the initial purchase of equipment are estimated at a maximum of \$400,000 per year.

Assumptions:

- A high efficient combustion device is estimated at \$20,000.
- 100 active drill rigs.
- Annual equipment replacement costs are estimated, assuming a minimum average usable life of five years.
- Maintenance and fuel gas are not included in the estimate.

Operators of wells, such as coal bed methane or other dry gas wells that do not require flaring will not incur these costs. This rule is expected to have minimal impact on economic competitiveness, job creation, or state revenues.

4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions.*

The costs for the equipment are one time costs and should not create adverse effects that are unique for small business. The requirements are the same for all oil and gas operators regardless of geographic region. The proposed rules are not anticipated to have any impact on small businesses, consumers, or private markets.

5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule.*

The proposed rule provides prescriptive regulatory language that is designed to protect public health, safety and welfare and the environment. The cost of no action is continued releases of HAPs, VOCs and particulates into the atmosphere. Depending on the location of the flaring the release of the natural gas could create impacts to public health, safety and welfare and the environment.

Another option considered was a voluntary program. However, prudent management of E&P waste is not a voluntary program. The proposed rule is preferred to a voluntary standard because an oil and gas operator would have no incentive to incur costs of compliance when the benefits of compliance accrue to the public at large.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 1002 (amended) Site Preparation and Stabilization

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)]
and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

The proposed amendments to the Site Preparation rule include modifications to make COGCC rules consistent with the National Resources Conservation Service (NRCS) process for describing and identifying soil horizons, additional best management practices (BMP) for soil protection, drill pad and access road construction, a list of BMPs proposed to address surface disturbance minimization, and edits related to the development of a separate and more robust stormwater program described in CBA-1002f.

Proposed Rules 1002.b.(1) and (2) are clarifications that are being made to be consistent with current National Resources Conservation Services (NRCS) soil description process. The NRCS no longer describes soils as a, b or c horizon but uses color, texture, and or organic content to distinguish soil horizons.

Proposed Rules 1002.c. contains clarification language on the type and purpose of the best management practices that should be used to protect soils. In proposed rule 1002.c. it has been clarified that protection of soils means preventing weed establishment and maintaining soil microbial activity.

Proposed Rule 1002.d. contains clarification language on the selection and construction of a drill pad location. In proposed Rule 1002.d. it has been clarified that deep cuts shall be made only if un-avoidable and that were feasible operators shall use directional drilling to reduce cumulative and adverse impacts on wildlife resources.

Proposed Rules 1002.e.(1)(2)(3)(4) modifies current Rule 1002.e. The proposed amendments include an anti-degradation clause, requirements to consolidate facilities were practicable, the avoidance of wetlands and riparian habitats or mitigation of adverse impacts to these areas, and list of requirements for access road construction. The stormwater runoff portion has been moved to a new section in proposed rule 1002.f.

The constructions of oil and gas locations can have an adverse impact the environment and natural resources including degradation of water quality, impacts to wetlands and riparian areas fragmentation of wildlife habitat. Access roads if not engineered and

constructed properly can be inadequate for the type and amount of traffic that they receive and may also impact wetlands and riparian areas.

Authority for this proposed rule is included in C.R.S. 34-60-105, 34-60-160(2)(d), 34-60-106(11) and 34-60-128.

2) *Please provide*

a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*

b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

The parties that are expected to benefit from the proposed rule include the general public, agricultural interests, natural resource and persons involved in outdoor recreation. The oil and industry and the COGCC will also see a benefit.

The general public will benefit from the proposed rules through greater protection of the environment and natural resources. Wildlife resources will benefit from reduced cumulative impact and a less fragmentation of habitat. Agricultural interests will benefit from the proposed rules through increased soil protection, improved reclamation that will bring land back into agricultural production sooner and through better weed management. Outdoor recreational participants are expected to benefit through protection of natural resources including wildlife habitat, wetlands, surface water and scenic areas. The proposed rules provide clarification between COGCC rules and the NRCS soils database, which should increase efficiency in the permitting process and improve overall site reclamation. Improved reclamation will reduce costs to operators and will allow them to terminate CDPHE stormwater permit sooner and through reducing monitoring and maintenance of reclamation projects.

3) *Please provide*

a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*

b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

The COGCC currently has rules that require operators to reduce surface disturbance for drill pad and access road construction. COGCC rules also contain provisions that operators must take precautions to prevent significant adverse impacts to air, water, soil and biological resources to the extent necessary to protect public health safety and welfare. Therefore, the assumption is that no additional costs, other than those already required, will be incurred by industry.

The COGCC also already conducts inspections to ensure operators are taking precautions to prevent significant adverse impacts to air, water, soil and biological resources to the extent necessary to protect public health safety and welfare. Therefore, no additional costs should be incurred by the COGCC based on these proposed rule amendments.

Further, this rule is not expected to have anything more than a minimal impact on economic competitiveness, job creation, or state revenues.

- 4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

The proposed rules are consistent for all entities regardless of size or geographic location. As stated before it appears that the benefits outweigh potential costs. The costs are minimal because operators should already be operating in manner that is protective of public health safety welfare the environment and wildlife resource and numerous parties including oil and gas companies stand to benefit from the proposed rules. This rule is therefore not expected to have more than a minimal impact on small business, consumers, or private markets.

- 5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

Several alternative approaches, including no action and voluntary compliance were considered during the preparation of this draft rule. No action will result in impacts to the environment and natural resources so it was dropped from consideration. A voluntary program was also dropped; protection of public health, safety and welfare and the environment and wildlife resources is not a voluntary action. The proposed rule are modifications to current rules were the oil and gas industry does incur costs; the oil and gas industry would have no incentive to continue to incur these costs for compliance when the benefits of compliance primarily accrue to the public at large.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 1002.f(1)(2) (amended) – STORMWATER
MANAGEMENT

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)]
and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

Proposed Rule 1002.f. consolidates stormwater management, which is currently only briefly discussed in three different rules, into one rule consisting of two components. The first component includes a more detailed description of Best Management Practices (BMPs) to control stormwater runoff and to protect stormwater from degradation due to contact with other pollutions sources. The second component includes the requirement that oil and gas operators develop and maintain a stormwater program that addresses potential pollution sources which may reasonably be expected to adversely impact the quality of stormwater runoff from ongoing oil and gas operations.

The current stormwater rules are general descriptions of structural best management practices (BMPs) for erosion control. The current rules do not take into account other forms of BMPs, such as planning, construction staging and design and engineering functions that can be affective for erosion control and do not consider other aspects of stormwater management such as protecting the stormwater from other pollution sources such chemicals, hazardous materials and wastes that may be used or stored at an oil and gas location.

Sediment runoff rates from construction sites are typically 10 to 20 times greater than those from agricultural lands, and 1,000 to 2,000 times greater than those from forest lands. In addition, construction activities may include the use of toxic or hazardous materials such as fuel, and automobile fluids, which may also pollute stormwater. These materials can be harmful to humans, wildlife, plants and aquatic life. Production operations may require use of hazardous materials or toxic chemicals such as corrosion inhibitors, products to remove wax and paraffin, and chemicals to keep entrained water from freezing in pipelines and process equipment. In addition, sediment can cloud the water and destroy aquatic habitats, cause excess nutrients that can cause algae blooms, and other wastes like, used motor oil, solvents, and or auto fluids that can adversely impact aquatic life, wildlife and pollute waters of the state and drinking water sources.

Authority for this proposed rule is included in C.R.S. § 34-60-105, § 34-60-160(2)(d), § 34-60-106(11) and § 34-60-128.

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

The beneficiaries of the proposed rule include (i) consumers of public water supplies located in oil and gas exploration and production areas (ii) agricultural interests that use surface water for livestock watering, (iii) agricultural interests that irrigate with surface water that could be adversely impacted by stormwater runoff and (v) natural resources including wildlife that could be adversely impacted by sediment and other chemicals that may impact stormwater runoff. The oil and gas industry, local health and environmental agencies and the COGCC should also benefit from the proposed regulation.

Consumers of public water supplies, agricultural interests, and wildlife resources will benefit from these regulations through a reduction in sediment entering surface waters that can cloud the water and destroy aquatic habitats, cause excess nutrients that can cause algae blooms, and other wastes like, used motor oil, solvents, and or auto fluids that can adversely impact aquatic life, wildlife and pollute waters of the state and drinking water sources.

The proposed rule will also benefit the oil and gas industry by providing more information and data for decision making and more flexibility in the selection of site specific BMPs. Oil and gas operators will also benefit by having a program in place that assists them in developing and quantifying pollution prevention requirements and a resultant reduction in adverse impacts that result in costly site investigations and spill cleanups.

As stated, the program required under 1002.f.(2) should result in a reduction of adverse impacts to the environment which will provide a benefit to local environmental health and environmental agencies, the CDPHE and the COGCC. Staff time (labor) spent responding to citizen's concerns and complaints, spill and upsets can be used to conduct monitoring, site inspections for pollution prevention and for public outreach. The reduction in adverse impacts also benefits the state agencies in meeting obligations to protect state waters from degradation

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

Operators are currently required to take precautions to prevent adverse impacts to air, soil, biological and water resources. Construction stormwater permits through the Colorado Water Quality Division and stormwater management plans (SWMPs) are required for any oil gas construction activity that disturbs more than one acre (with some exemptions)., Therefore oil and gas operators should incur no additional costs as a consequence of the proposed rules. Oil and gas operators that construct and operate an oil and gas location that has not received a notice of termination from the CDPHE will be incur costs associated with proposed rule 1002.f.(2).

Proposed Rule 1002.f.(2) will require the development and maintenance of a stormwater program that is not currently required. It is anticipated that operators will incur costs the first year for design and implementation of the program and annual costs for maintenance of the program. These costs are summarized below.

Initial Design/Implementation	\$13,000.00
Annual costs:	\$17,000.00
Lifetime:	\$352,319.00

- The costs are based on a large independent oil and gas company with production and gas gathering locations.
- 20 yr Lifetime.
- Initial year costs include design and implementation.
- Labor rates are estimated average.
- Smaller companies would incur the Initial year costs but ongoing lifetime costs will be less.
- There has been no reduction for economy of scale considering that the design and implementation costs for Proposed Rules 205 and 206 will complement the design and implementation costs for proposed Rule 1002.f.(2).
- A detailed spreadsheet that outlines the costs is attached.

No additional costs for state or local agencies are anticipated. The first part of the proposed rule provides clarification and descriptions of best management practices for stormwater control and pollution prevention. COGCC staff already conducts inspections for good housekeeping, spills, environmental impacts and stormwater erosion which are the major components of the stormwater program in 1002.f(2). The proposed rule does not require additional data, plans or other documents be submitted therefore the COGCC will not incur labor costs for document review and or management.

4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

The proposed rules apply to all operators regardless of size or geographic region. Operators in remote areas with steep terrain or heavy precipitation may incur site

specific costs to meet and maintain compliance, but these factors are based on the operator's drilling, leasing and management decisions. The rules are not anticipated to have any impact on consumers, sales, employment or tax revenue.

- 5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

The cost of no action is potential adverse impacts to public health, safety and welfare, the environment and to wildlife resources. The proposed rule allows flexibility in selection of site specific BMPs, and therefore alternative proposals were not evaluated.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 1003 (amended) INTERIM RECLAMATION

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)]
and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

Rule 1003 sets forth the operator requirements for interim reclamation of all disturbed areas affected by drilling or subsequent operations, except those areas reasonably needed for production operations. This includes drilling pit closure, revegetation and weed control.

Rule 1003.b. currently allows operators up to twelve (12) months to perform interim reclamation on non-cropland for areas no longer in use. This provides a long period of time for erosion to occur and/or for the establishment of noxious weeds. The amended rule shortens this period of time to six (6) months.

Rule 1003.d. currently has no requirement to document that soils and/or ground water in drilling pits meet the COGCC standards set forth in Table 910-1. Additionally, the current rule does not specify the deadline for closure of drilling pits. The amended rule clarifies the allowable period of time for drilling pit closure which is set forth in proposed rule revision to Rule 1003.b.

Rule 1003.e. currently does not have a performance standard or completion notice for interim reclamation. The amended rule includes specific performance standards.

Rule 1003.f. currently states that all disturbed areas shall be kept *reasonably* free of noxious weeds *as practicable*. The term *reasonably* and *as practicable* could vary significantly between operators, surface owners and the COGCC staff. The amended rule specifies compliance standards.

The statutory authority for this rule is C.R.S. §34-60-105.

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

Surface owners, recreational consumers, the general public and the regulated community are expected to benefit from the proposed changes to this rule. Wildlife should also benefit in certain geographic areas by having habitat restored in a shorter time frame.

The proposed changes to Rule 1003.a. eliminates the language allowing materials to be burned or buried onsite in order to avoid any confusion and misinterpretation of the rule contents.

The proposed change to Rule 1003.b. would shorten the time frame for interim reclamation to be completed and thereby lessening the potential for erosion and/or the establishment of noxious weeds making reclaimed areas more valuable for recreational use and for wildlife.

The proposed changes to Rule 1003.d. includes the requirement that operators ensure that soils and/or ground water meet the COGCC standards in Table 910-1. The proposed changes to the rule also requires that closure of drilling pits on cropland or on non-cropland within the 100-year floodplain shall occur within three (3) months after drilling operations have been completed. Additionally, closure of drilling pits on all other non-cropland locations shall occur within six (6) months after drilling operations have been completed. These changes will make reclaimed areas more valuable for recreational use and for wildlife.

The proposed changes to Rule 1003.e. sets forth site stabilization requirements including a vegetative plant density standard of at least 70 percent. Additionally, an interim reclamation completion notice will be required which includes photographs. The information contained in the notice along with photographs will notify COGCC staff that the location is ready for an inspection. The regulated community will benefit from the proposed revision to Rule 1003.e. as it will set a definitive performance standard to be met for interim reclamation.

The proposed changes to Rule 1003.f. provides better guidance to operators in the control of noxious weeds. It also places responsibility to monitor disturbed areas and reclaimed sites for noxious weed infestations upon the operator. These changes will make reclaimed areas more valuable for recreational use and for wildlife.

1003.b. 1) A shorter window for interim reclamation will allow landowners to return their property to beneficial use quicker; 2) A shorter window for interim reclamation will reduce the potential for erosion; and, 3) A shorter window for interim reclamation will reduce the potential for noxious weeds to establish.

The proposed rule may provide new business opportunities for and have a positive financial impact on third party contractors, such as environmental consultants, service companies, analytical laboratories, waste management contractors.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

Oil and gas operators as well as the regulating agency are expected to incur costs.

The total number of APDs approved in 2007 was 6,368. Historic statistics on APD re-filings indicates that approx. 40% are not drilled. Based on this assumption, approx. 3,820 sites would be subject to interim reclamation.

COGCC Rule 1003.e.(3) – The submittal of a Sundry Notice – Form 4 would be required as notification to the COGCC that interim reclamation has been accomplished. This is a new procedure and would require additional staff for data entry and environmental review. The estimated cost per site is \$22.37 x 3,820 sites = approximately \$85,463.

O&G Operators Rule 1003.e.(3) - The submittal of a Sundry Notice – Form 4 would be required as notification to the COGCC that interim reclamation has been accomplished. This is a new procedure and would require additional expense. The estimated cost per site for an oil and gas operator is \$78.43 x 3,820 sites = approximately \$299,602.

- 4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

There are no expected adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions.

- 5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

1003.b. Maintaining the status quo for interim reclamation on non-cropland may increase the potential for erosion and for noxious weeds to establish.

1003.d. Maintaining the status quo could result in a number of sites being closed where operators did not ensure that soil and ground water met the allowable concentrations and levels in Table 910-1 (see cost benefit and regulatory analyses for Rule 905.) Prudent management of E&P waste is not a mandatory program.

1003.e. Maintaining the status quo would result in no COGCC notification of interim reclamation completion and therefore no efficient mechanism to trigger an interim reclamation inspection by COGCC staff.

A voluntary standard would not implement the rule objective because the parties benefiting from the absence of standards and incurring the cost of the proposed standard would not have an incentive to employ the standards as the benefits are expected to accrue to the public at large.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 1004 (revised) FINAL RECLAMATION OF WELL SITES
AND ASSOCIATED PRODUCTION FACILITIES

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)]
and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

Rule 1004. sets forth the operator requirements for final reclamation upon plugging and abandonment of a well and closure of associated production operations. This includes well locations, access roads, production facilities, pit closures, revegetation and weed control.

Rule 1004.a. has been revised to bring COGCC regulations into agreement with other solid waste disposal regulations.

Rule 1004.c.(2) currently does not have a performance standard for final reclamation. The revised rule sets a performance standard for final reclamation. New Rule 1004.e. also states the performance standard for the release of any associated financial assurance.

The statutory authority for the proposed amendment to rule 1004 resides in C.R.S. § 34-60-105, 34-60-106(2)(d), 34-60-106(3.5), 34-60-106(11), 34-60-106(12), and 34-60-128.

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

Surface owners, recreational consumers and the general public are expected to benefit from the proposed changes to this rule. The regulated community will benefit from the proposed revision to Rule 1004.c.(2) and new Rule 1004.e. as it will set a definitive performance standard to be met for interim reclamation which will reduce uncertainty for meeting currently required surface reclamation standards.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*

b) an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]

Final reclamation is currently required when wells are plugged and abandoned and associated production facilities are closed. The proposed revisions to Rule 1004 set a performance standard to the current requirement. Therefore, there should be no incurred costs to the regulated community or the regulating agency. In addition, there are no anticipated impacts to economic competitiveness, job creation, and state revenues.

4) Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]

There are no anticipated impacts to small businesses, consumers, private markets, or any particular geographic regions.

5) Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]

None.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 1202 (new) - IDENTIFICATION OF WILDLIFE SPECIES

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)]
and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

Oil and gas activities have the potential to harm wildlife populations and habitat, and this has occurred in areas throughout Colorado. This fact led to the unanimous adoption of HB07-1298, which is designed to minimize adverse impacts of oil and gas operations on wildlife resources. In HB 1298, the General Assembly declared it to be in the public interest to plan and manage oil and gas operations in a manner that balances development with wildlife conservation. CRS 34-60-102(1)(a)(IV). The legislature also directed the OGCC to administer the Oil and Gas Conservation Act "so as to minimize adverse impacts to wildlife resources affected by oil and gas operations," and it provided direction on what it means to minimize adverse impacts. *Id.* at 34-60-128(2), (3).

In order to comply with this legislative mandate, the OGCC will require information about what wildlife species are present in the vicinity of a proposed oil and gas location. Rule 1202 thus requires an operator to review existing data to identify wildlife species, and to use scientifically acceptable survey techniques to survey, map, and report the occurrence of a limited set of wildlife species in particular regions of Colorado. The identified species and areas were selected either because the state currently lacks adequate or complete data about them or because the species move around the landscape seasonally and should be located on an annual basis.

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

The general public, for whom the CDOW holds Colorado's wildlife in trust, will benefit from the proposed regulation because it will result in the identification of wildlife species in the vicinity of a proposed oil and gas location and allow for the protection of these species to the extent deemed necessary by the COGCC, pursuant to the Colorado Oil and Gas Conservation Act. The public as trustee will likewise benefit by the rule because it will result in operators providing information about wildlife species, populations, and habitats that may supplement existing database information. Finally, recreationists who desire to see wildlife, conservationists, and sportsmen will also

likewise benefit from the rule because it will result in the minimization of adverse impacts to wildlife resources.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

All oil and gas operators in Colorado will be required to consult the NDIS database to identify wildlife species in the vicinity of the proposed oil and gas location and to conduct surveys to identify the presence of enumerated wildlife species. To do so, operators will be required to utilize the internet to access the NDIS database to identify species in the vicinity of the proposed oil and gas location. We think it is likely that in most circumstances these businesses already have internet access, so this would impose little additional cost.

It will also require small business owners to conduct surveys to identify selected wildlife species with existing personnel or with individuals hired for this specific purpose. We have been told that most if not all companies are already performing surveys of the kind proposed in Rule 1202 on public and private land. The costs of performing these surveys is highly variable, depending on where it will occur, the time of year, the amount of information in NDIS, and the amount of impact of the development. A reasonable estimate for a simple ocular survey of a small (<10 acre) site by one biologist/technician is from \$500 to \$1500 for a one-day assessment and write-up. We have also seen estimates as high as \$1500 per day for crews performing small mammal trapping, breeding, bird transects, and aquatic surveys (electrofishing), which would include both surveys and reports. This rule is expected to have minimal impact on economic competitiveness, job creation, or state revenues.

Information collected pursuant to the proposed regulation would be utilized by OGCC and state wildlife officials in arriving at proper conditions of approval for drilling permit applications. Other than incidental costs incurred in filing this information, and aside from other rules pursuant to which state agencies would use the information (i.e. Rule 303, 306), the proposed regulation will not result in increased government costs.

4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

The proposed rule requires all operators in certain regions of Colorado to perform surveys for particular species. This regional specificity is justified because these species

are not found in all areas of Colorado; to require operators to survey for a species known not to exist in a region would result in unnecessary burdens on the operator.

Small business owners should have little trouble complying with the requirements of Rule 1202. We estimate that the cost of performing the required wildlife surveys will not exceed \$2,000 per oil and gas location, which can cover multiple oil and gas wells and associated production infrastructure. The rule is therefore not expected to have significant adverse impacts on small businesses, consumers, or private markets.

- 5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

We considered several options, including taking no action and relying only on the existing Natural Diversity Information Source (NDIS) database for wildlife occurrence data. We did not select the no action alternative because an essential step in minimizing impacts to wildlife resources is to identify what species are present in an area proposed for oil and gas activities. If the identification of wildlife species is not included in the OGCC rules, the agency will be unable to reasonably regulate oil and gas activities in a way that is not arbitrary.

We did not elect to rely exclusively on the NDIS database because we determined that site-specific surveys for a very limited set of species was required in order to minimize adverse impacts to wildlife resources by providing data that is otherwise inadequate or incomplete. This and other measures were discussed with various stakeholders, including several small businesses.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 1203 (new) - TRANSPORTATION PLANNING

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)]
and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

In HB07-1298, the General Assembly unanimously declared it to be in the public interest to plan and manage oil and gas operations in a manner that balances development with wildlife conservation. CRS 34-60-102(1)(a)(IV). The legislature also directed the OGCC to administer the Oil and Gas Conservation Act “so as to minimize adverse impacts to wildlife resources affected by oil and gas operations,” and it provided direction on what it means to minimize adverse impacts. *Id.* at 34-60-128(2), (3). Additionally, the OGCC is to include in regulations “standards for minimizing adverse impacts to wildlife resources affected by oil and gas operations.” *Id.* at 34-60-128(d).

In order to comply with this legislative mandate, Rule 1203 will require operators to plan transportation networks to minimize the number and length of roads and encourage operators to utilize common roads and access points to the maximum extent practicable. The rule is intended to decrease fragmentation of wildlife habitat, which will minimize adverse impacts on wildlife resources.

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

The general public, for whom the CDOW holds Colorado’s wildlife in trust, will benefit from the proposed regulation because it will result in the minimization of habitat fragmentation that results from new road construction. The public as trustee will likewise benefit by the rule because it will encourage operators to engage in advance planning so that existing roads are used, which will minimize adverse impacts to wildlife resources. This will likewise inure to the benefit of recreationists who desire to see wildlife, conservationists, and sportsmen will also likewise benefit from the rule because it will result in the minimization of adverse impacts to wildlife resources. Finally, the proposed rule will potentially benefit operators who save money by reducing new road construction through advance planning, which may identify and eliminate unnecessary roads.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

All operators proposing new oil and gas locations will be required to plan transportation networks so as to minimize the number and length of roads. This planning requirement will not impose appreciable additional operational requirements to these operators' activities and should not result in any additional costs to operators or more than minimal effects on economic competitiveness, job creation, or state revenues.

The proposed regulation requires operators to plan road networks and encourages them to utilize common roads. It will thus not result in any additional costs to government.

4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

Oil and gas operators statewide who are planning new locations in Colorado will be required to comply with the road-planning requirement, and operators statewide will also be encouraged to utilize common roads. Because it does not impose any strict requirements as to road construction or planning, this rule should not have adverse effects on small businesses, consumers, private markets, or particular geographic regions.

5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

We considered several options, including no action and mandating certain road densities or mileage. We did not select the no action alternative because failing to require operators to minimize the number and length of new roads would result in continued fragmentation of wildlife habitat, which causes adverse impacts to wildlife resources. Likewise, we elected not to mandate certain road densities or mileage. The proposed regulation requires operators to plan road networks, but leaves the actual result of this planning to the operator's discretion and judgment. The proposed regulation encourages, but does not require, operators to utilize common roads and access points, meaning that

an operator will likely do so when it determines that such a course of action is advantageous or desirable. This and other measures were discussed with various stakeholders, including several small businesses.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 1204 (new) - MOSQUITO CONTROL

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)]
and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

In HB07-1298, the General Assembly unanimously declared it to be in the public interest to plan and manage oil and gas operations in a manner that balances development with wildlife conservation. CRS 34-60-102(1)(a)(IV). The legislature also directed the OGCC to administer the Oil and Gas Conservation Act “so as to minimize adverse impacts to wildlife resources affected by oil and gas operations,” and it provided direction on what it means to minimize adverse impacts. *Id.* at 34-60-128(2), (3). Additionally, the OGCC is to include in regulations “standards for minimizing adverse impacts to wildlife resources affected by oil and gas operations.” *Id.* at 34-60-128(d).

In order to comply with this legislative mandate, the OGCC will require operators to treat waste water pits and other pits containing water that would provide a medium for breeding mosquitoes with Bti (*Bacillus Thuringiensis v. israelensis*), or to take other effective action to control mosquito larvae. If left untreated, these water sources can increase the abundance and distribution of mosquito populations, increase the risk of West Nile virus transmission, and increase wildlife mortality and negative impacts on populations of wildlife species. Many species of birds are much more susceptible to West Nile virus than are humans, including greater sage-grouse, and outbreaks of West Nile virus have led to local population crashes and extirpations. The proposed regulation will reduce the distribution and abundance of mosquitoes that vector West Nile virus and reduce the risk of West Nile virus transmission to wildlife, particularly birds.

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

The general public, for whom the CDOW holds Colorado’s wildlife in trust, will benefit from the proposed regulation because it will result in reducing the abundance and distribution of mosquitoes that vector the West Nile virus. The public as trustee will likewise benefit by the rule because it will reduce the risk of West Nile virus

transmission to wildlife species, particularly bird species such as the greater sage-grouse, which will result in minimizing adverse impacts to wildlife resources. This will likewise inure to the benefit of recreationists who desire to see wildlife, conservationists, and sportsmen will also likewise benefit from the rule because it will result in the minimization of adverse impacts to wildlife resources.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

All oil and gas operators maintaining waste water pits or any associated pits containing water would be required to comply with this requirement. Operators will be required to purchase Bti and to treat waste water pits or other pits containing water that provides a medium for breeding mosquitoes. We estimate that the cost of the proposed action is approximately \$82 per 2,500 square-foot of pond surface area for a period running from July 1 to September 15. This is based on a cost of \$1.30 per 100 square feet of area treated, times 30 days for mosquito dunks. This rule is expected to have minimal impact on economic competitiveness, job creation, or state revenues.

Because this requirement applies to operators and does not require any government activity, no increase in government costs is expected.

4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

Oil and gas operators statewide who maintain waste water pits or any associated pits containing water would be required to comply with this requirement. It would thus not have adverse effects on any particular geographic regions. Small business owners should be able to implement the proposed regulation without significant cost. The cost of treating a single waste water pit for the two and a half months would likely be under \$250. The rule is therefore not expected to have more than a minimal impact on small businesses, consumers, or private markets.

5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

We considered a number of alternatives, including taking no action, limiting the number of ponds or eliminating waste water pits altogether, engineering ponds so that they do not provide mosquito breeding areas (i.e. maintaining slopes of 3:1 to maintain deep water), and including a narrative requirement that operators control mosquito populations.

We did not select the no action alternative because if water sources associated with oil and gas development are not treated to control mosquitoes, the distribution and abundance of mosquitoes will not be reduced, and the risk of transmission of West Nile virus will not be reduced. This could result in significant impacts to wildlife populations, particularly birds such as greater sage-grouse. This, in turn, could lead to listing of this or other species under the Endangered Species Act, which would likely result in significant restrictions on oil and gas activities in critical habitat areas.

We rejected the alternative of limiting the number of ponds or eliminating waste water pits altogether because the costs of doing so would likely outweigh the benefit to wildlife species. We rejected adopting engineering requirements for the same reason. Finally, we chose not to include only a narrative requirement that operators control mosquito populations, because we determined that a more prescriptive rule was more likely to achieve the desired results. We did, however, allow operators the discretion to choose to take “other effective action to control mosquito larvae.” This and other measures were discussed with various stakeholders, including several small businesses.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 1205 (new) - BEAR CONTROL MEASURES

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)]
and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

In HB07-1298, the General Assembly unanimously declared it to be in the public interest to plan and manage oil and gas operations in a manner that balances development with wildlife conservation. CRS 34-60-102(1)(a)(IV). The legislature also directed the OGCC to administer the Oil and Gas Conservation Act “so as to minimize adverse impacts to wildlife resources affected by oil and gas operations,” and it provided direction on what it means to minimize adverse impacts. *Id.* at 34-60-128(2), (3). Additionally, the OGCC is to include in regulations “standards for minimizing adverse impacts to wildlife resources affected by oil and gas operations.” *Id.* at 34-60-128(d).

In order to comply with this legislative mandate, the OGCC will require operators to install and utilize bear-proof dumpsters and trash receptacles at all facilities in black bear habitat west of I-25 and on Raton Mesa east of I-25. Throughout Colorado’s black bear habitat, many municipalities (Avon, Aspen, Basalt, Crested Butte, Glenwood Springs, Minturn, Telluride, Redcliff, Snowmass Village, Steamboat, and Vail) and two counties (Eagle and Pitkin) have ordinances that require trash receptacles and dumpsters to be resistant to access by bears and other wildlife. These measures are also required in numerous National Parks and National Forest campgrounds, back-country use, and by concessionaires and private contractors. The basis for such regulations is to enhance public safety and protect the health and welfare of citizens, bears, and other wildlife. This and other measures were discussed with various stakeholders, including small businesses.

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

The general public, for whom the CDOW holds Colorado’s wildlife in trust, will benefit from the proposed regulation because it will minimize the potential that individual bears will have access to human food sources and thereby become habituated to oil and gas facilities which will result in their euthanization. The proposed rule will also benefit

operators and the general public alike because it will reduce the potential for conflicts between humans and bears; these conflicts generally end either in injury to the human or euthanization of the bear. Finally, the proposed rule will inure to the benefit of recreationists who desire to see wildlife, conservationists, and sportsmen will also likewise benefit from the rule because it will result in the minimization of adverse impacts to wildlife resources.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

Operators with facilities in black bear habitat west of I-25 and on Raton Mesa east of I-25 who do not already utilize bear-proof trash receptacles will be required to purchase, rent, or lease bear-proof dumpsters or other trash receptacles. A 6-8 cubic yard bear-proof container is approximately \$200 more per unit than a non-bear-proof container. This rule is expected to have minimal impact on economic competitiveness, job creation, or state revenues.

The proposed regulation does not impose any additional costs on government. It will actually result in a reduction of government costs by reducing the number of instances in which the Division of Wildlife must respond to human-bear conflicts and undertake conflict bear management.

4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

The proposed regulation applies to operators with facilities in black bear habitat west of I-25 and on Raton Mesa east of I-25. It does not apply statewide because there are areas of the state that do not support black bear populations. In many instances, the use of the required bear-proof trash receptacles is already required as a matter of local or county ordinance in these areas. The rule is therefore not expected to have more than a minimal impact on small businesses, consumers, or private markets.

5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

We considered taking no action and relying solely on education efforts. The primary consequence of taking no action is increased bear mortality. Bear deaths due to conflicts from 1995 to 2007 accounted for about 13% of all recorded bear mortality. Conflicts relating to human developments accounted for 24% of all bear-human conflicts in the State of Colorado from 1986 to 2003. Aside from bear deaths, the increase in conflicts has demanded greater attention and expenditures from wildlife agency managers and local governments in control efforts. In addition, bear issues on private land are particularly problematic for landowners because it can result in additional game damage and private property damage.

With regard to education, this is something that will be pursued concurrently with the proposed regulation. However, given the number of people, the diversity of companies, and the number and diversity of sites, we declined to rely solely on education. It is difficult to ensure that information is provided to all parties, and enforcement is exceedingly difficult.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 1206 (new) - DISINFECTING EQUIPMENT

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)]
and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

In HB07-1298, the General Assembly unanimously declared it to be in the public interest to plan and manage oil and gas operations in a manner that balances development with wildlife conservation. CRS 34-60-102(1)(a)(IV). The legislature also directed the OGCC to administer the Oil and Gas Conservation Act “so as to minimize adverse impacts to wildlife resources affected by oil and gas operations,” and it provided direction on what it means to minimize adverse impacts. *Id.* at 34-60-128(2), (3). Additionally, the OGCC is to include in regulations “standards for minimizing adverse impacts to wildlife resources affected by oil and gas operations.” *Id.* at 34-60-128(d).

In order to comply with this legislative mandate, the OGCC will require operators to disinfect heavy equipment, hand tools, boots, and any other equipment used previously in another water body within the past 30 days. Doing so will reduce the likelihood that state waters will be invaded by potentially harmful aquatic wildlife, plants, and disease organisms.

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

The proposed regulation will benefit state, local, and county governments because it will reduce the likelihood that state waters will be invaded by potentially harmful aquatic wildlife, plants, and disease organisms, which often require substantial expenditures to attempt to eradicate. It will likewise benefit state, local, and county officials by reducing the likelihood that aquatic nuisance species will be transported from one water body to another, which results in exponential increases in costs due to the rate at which many aquatic nuisance species reproduce and the difficulty of stopping the spread of these species into new waters. Finally, the proposed rule will benefit recreationists, conservationists, and sportsmen because it will result in the minimization of adverse impacts to wildlife resources.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

Operators will be required to undertake methods or practices to disinfect equipment, and they will likely be required to purchase disinfecting equipment or contract for equipment disinfecting services. Much of the equipment is already located at an oil and gas location. The chemical treatment in the proposed regulation is commonly available under the commercial trade name Sparquat 259 or Formula 409. This rule is expected to have minimal impact on economic competitiveness, job creation, or state revenues.

Because the proposed regulation applies to activities of operators, its implementation will not result in increased costs to government.

4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

The proposed regulation should not impose significant adverse effects on oil and gas operators, small businesses, consumers, private markets, or particular geographic regions. Much of the equipment required to disinfect equipment is already in use at oil and gas locations in Colorado, and the chemical treatments called for in the proposed rule are commonly available commercially.

5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

We considered several options, including taking no action or requiring other methods to disinfect equipment. Taking no action could lead to the transmittal of aquatic nuisance species or other potentially harmful aquatic wildlife, plant, or disease organisms to waters of the State of Colorado. Once established, some of these species are extremely difficult to eradicate and impose significant costs to state and local government.

Upon review of the literature and examples from particular areas of Colorado or other states, we selected the measures in the proposed regulation as the best method of

fostering a balance between oil and gas development and minimizing adverse impacts to wildlife resources.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 1207 (new) - WILDLIFE MOVEMENT DURING
PIPELINE CONSTRUCTION

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)]
and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

In HB07-1298, the General Assembly unanimously declared it to be in the public interest to plan and manage oil and gas operations in a manner that balances development with wildlife conservation. CRS 34-60-102(1)(a)(IV). The legislature also directed the OGCC to administer the Oil and Gas Conservation Act “so as to minimize adverse impacts to wildlife resources affected by oil and gas operations,” and it provided direction on what it means to minimize adverse impacts. *Id.* at 34-60-128(2), (3). Additionally, the OGCC is to include in regulations “standards for minimizing adverse impacts to wildlife resources affected by oil and gas operations.” *Id.* at 34-60-128(d).

In order to comply with this legislative mandate, the OGCC will require operators constructing trenches for pipelines that are left open for more than 5 days and that are greater than 5 feet in width to install wildlife crossovers and escape ramps at well defined game trails and at a minimum of 1/4 mile intervals. Doing so will avoid entrapment of wildlife in trenches by facilitating crossings and escape.

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

The general public, for whom the CDOW holds Colorado’s wildlife in trust, will benefit from the proposed regulation because it will mitigate potential adverse impacts to big game species associated with wildlife entrapment in pipeline right-of-way excavations. The public as trustee will likewise benefit by the rule because it will facilitate wildlife crossings of pipeline trenches, thereby minimizing habitat fragmentation and adverse impacts on migration corridors. Finally, the rule will inure to the benefit of recreationists who desire to see wildlife. Conservationists and sportsmen will also benefit from the rule because it will result in the minimization of adverse impacts to wildlife resources.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

When constructing pipelines and digging large trenches that will be open for more than 5 days, operators will be required to install wildlife crossovers and escape ramps at reasonable intervals. The equipment necessary to comply with this requirement is commonly available. The cost of complying with this rule would vary depending on whether the operator was using a trencher or backhoe to dig the pipeline trench. If using a backhoe initially, the costs would be insignificant because it would simply require additional backhoe hours. We estimate that it would take 2.5 hours per mile of pipeline to construct the ramps and crossover plugs; at an estimated cost of \$150/hour, the proposed regulation would cost an additional \$375 per mile of excavation. If the operator was using a trencher, leaving a "plug" would be problematic and would probably require that the company backfill the trench with dirt to form the plug (using a backhoe, at the estimated costs above, instead of the trencher). If the operator was required to mobilize a backhoe at a delivery cost of \$300, and at a daily rental cost of \$300/day with an hourly rate of a backhoe operator of \$150 per hour, and at a rate of 5 hours per mile of pipe, the estimated cost of complying with the regulation would be \$750 per mile. This rule is expected to have minimal impact on economic competitiveness, job creation, or state revenues.

Because the proposed regulation applies to activities of operators, its implementation will not result in increased costs to government.

4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

The installation of wildlife crossovers and escape ramps are common practice and are able to be implemented by all oil and gas operators, including small businesses. The proposed regulation should not impose undue operational or financial burdens on oil and gas operators. Much of the equipment required to install crossovers or escape ramps is already in use at oil and gas pipelines locations in Colorado. The rule is therefore not expected to have more than a minimal impact on small businesses, consumers, or private markets.

5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

Failure to impose the proposed requirements would result in entrapment of wildlife, particularly big game species, in trenches excavated for pipeline installation. This would result in wildlife mortality and could cause adverse impacts to wildlife resources.

We declined to select intervals that were larger or smaller than those proposed, despite the fact that project design criteria for other projects in Colorado utilized these other intervals. We selected the interval in the proposed regulation because we determined that it represented an appropriate balance between fostering the development of oil and gas resources and minimization of adverse impacts to wildlife resources.

We declined to select an alternative requiring ramps only at the ends of the pipeline trench, because we determined that it would not allow for adequate wildlife escape.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 1208 (new) - TIMING LIMITATION AREAS

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)]
and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

In HB07-1298, the General Assembly unanimously declared it to be in the public interest to plan and manage oil and gas operations in a manner that balances development with wildlife conservation. CRS 34-60-102(1)(a)(IV). The legislature also directed the OGCC to administer the Oil and Gas Conservation Act “so as to minimize adverse impacts to wildlife resources affected by oil and gas operations,” and it provided direction on what it means to minimize adverse impacts. *Id.* at 34-60-128(2), (3). Additionally, the OGCC is to include in regulations “standards for minimizing adverse impacts to wildlife resources affected by oil and gas operations.” *Id.* at 34-60-128(d).

In order to comply with this legislative mandate, the OGCC will require the application of timing limitations in certain areas, as delineated on the Division of Wildlife's Species Activity Mapping system. The proposed regulation identifies periods of up to three months in which drilling activities will be restricted in certain habitats that are critical to certain wildlife species, for the purpose of minimizing adverse impacts to wildlife resources.

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

The general public, for whom the CDOW holds Colorado’s wildlife in trust, will benefit from the proposed regulation because it will result in the minimization of adverse impacts to wildlife species by identifying discrete periods in which development is particularly harmful for certain species, and tailoring timing restrictions to these periods and species. The general public and operators alike will also benefit by the application of this rule because it could avoid potential drilling or development restrictions resulting from other laws, including the Endangered Species Act, by avoiding negative impacts to imperiled species from oil and gas activities. This rule will ultimately inure to the benefit of recreationists, conservationists, and sportsmen because it will result in the minimization of adverse impacts to wildlife resources.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

Operators, including small business owners will have to comply with restrictions on drilling activities in certain areas for certain periods. Because it is only a seasonal restriction on activities, the proposed regulation does not require new equipment or any other additional requirements. There are thus no direct compliance costs associated with Rule 1208.

The proposed regulations provide several ways by which an operator may avoid the application of the timing limitations in Rule 1208. For example, an operator may develop and seek acceptance of a Comprehensive Drilling Plan. An operator may also initiate consultation with OGCC and state wildlife officials, which should take place over less than 5 days, to negotiate conditions of approval that could provide relief from the applicability of Rule 1208. Advance planning through Comprehensive Drilling Plans or consultation would likely result in some additional cost to an operator, although these would be undertaken at the operator's discretion presumably in cases where the costs of doing so are determined to be less than the cost of complying with Rule 1208.

Moreover, the rule could result in costs associated with lost opportunity. For example, operators who have not accounted for the timing restrictions may not be able to put to use drilling rigs that are under contract, resulting in costs. Aware of the potential that the proposed regulation could potentially result in costs associated with lost opportunity, we requested on April 11, 2008 information from over 50 oil and gas operators about potential specific costs of compliance with Rule 1208 (among other rules). To date, we have not received any response from representatives of the oil and gas industry to this request for information. It is therefore difficult to estimate the direct and opportunity costs associated with compliance with Rule 1208. Nonetheless, this rule is not expected to have significant impact on economic competitiveness, job creation, or state revenues.

As to government costs, where an operator does not seek a variance from the provisions of Rule 1208, there should be little or no government cost associated with this regulatory provision. Where an operator seeks a variance from the timing limitations, government costs would accrue as a result of consultations undertaken on a particular permit application. In addition, an operator may opt to develop a Comprehensive Drilling Plan in order to arrive at presumptive conditions of approval that could excuse compliance with timing limitations in certain circumstances, and development and acceptance of this Comprehensive Drilling Plan would result in government costs. The government costs

associated with consultation and processing Comprehensive Drilling Plans are set forth in the cost benefit analyses for Rule 306 and 216. As set forth in those Cost-Benefit Analyses, the government costs from these processes are not likely to be significant and represent reviews that would otherwise take place on a permit-specific basis.

- 4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

All oil and gas operators wishing to conduct activities in the identified habitats and regions of Colorado will be required to comply with the proposed regulation, including small businesses. The effect of this rule would be greatest in the Piceance and San Juan Basins. This regional specificity is necessary because the identified species are not found in all areas of Colorado.

Because it is simply a limitation on activities, the proposed regulation does not require the operator to implement any changes to its activities. Many operators in Colorado currently maintain an inventory of drilling permits that exceeds the number of wells they will drill in a year. Thus many companies will have a flexibility concerning where and when they engage in drilling operations, and they can typically use this flexibility to avoid timing limitations included in this proposed rule. In addition, the proposed regulation could encourage operators to seek to avoid the applicability of Rule 1208 by engaging in broader planning through Comprehensive Drilling Plans or site-specific consultation with the OGCC and wildlife officials. Again, these steps would be taken at the operator's discretion and presumably only in cases where the costs of doing so are determined to be less than the cost (i.e. opportunity cost) of complying with Rule 1208.

Through advanced planning and/or consultation with state officials, operators will be available to avoid the application of Rule 1208 in a way that should minimize or eliminate any potential adverse effects of the proposed rule. The rule is therefore not expected to have more than a minimal impact on small businesses, consumers, or private markets.

- 5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

We considered a variety of options, including taking no action, making operational requirements optional through best management practices, and making timing restrictions last longer and be cumulative.

Oil and gas activities may reduce the quantity of habitats, degrade the quality of habitats, or make portions of key habitats unavailable for certain species because of behavioral

avoidance. These will, in turn, have adverse impacts on wildlife resources. Failing to take the proposed regulatory action would result in adverse impacts to wildlife resources. In addition, failing to take the proposed actions could lead to more severe drilling or development restrictions resulting from the application of other laws, including the Endangered Species Act. For these reasons, we did not select the no action alternative.

We considered allowing operators to come up with their own mitigation and then to enter into negotiations with state wildlife officials, but we determined that this would be more time intensive, require the expenditure of more government time and effort, and result in substantial uncertainty on the part of industry.

Finally, we considered longer timing restrictions and allowing the timing restrictions to apply cumulatively to restrict drilling activities for periods exceeding 90 days. We rejected this alternative because we did not feel it represented the proper balance between fostering the development of oil and gas resources and protection of public health, safety, and welfare, including the environment and wildlife resources.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

Rule (new/amended) - Subject: 1209 (new) - RESTRICTED SURFACE OCCUPANCY AREAS

1) *Please provide*

- a) *a description of the proposed rule,*
- b) *a description of the motivation for the proposed rule; [C.R.S. § 24-4-103(2.5)(a)(I)] and*
- c) *a reference to the statute(s) providing authority for the proposed rule.*

In HB07-1298, the General Assembly unanimously declared it to be in the public interest to plan and manage oil and gas operations in a manner that balances development with wildlife conservation. CRS 34-60-102(1)(a)(IV). The legislature also directed the OGCC to administer the Oil and Gas Conservation Act “so as to minimize adverse impacts to wildlife resources affected by oil and gas operations,” and it provided direction on what it means to minimize adverse impacts. Id. at 34-60-128(2), (3). Additionally, the OGCC is to include in regulations “standards for minimizing adverse impacts to wildlife resources affected by oil and gas operations.” Id. at 34-60-128(d).

In order to comply with this legislative mandate, the OGCC will require operators to avoid identified areas to the maximum extent possible when planning and conducting oil and gas development operations, except when authorized pursuant to consultation with state wildlife officials, when the species is not in fact present, or in situations posing a risk to human or environmental health or safety.

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rule [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

The general public, for whom the CDOW holds Colorado’s wildlife in trust, will benefit from the proposed regulation because it will result in the minimization of adverse impacts to wildlife species by identifying areas that operators are to avoid to the maximum extent possible when planning or conducting oil and gas development operations. The general public and operators alike will also benefit by the application of this rule because it could avoid potential drilling or development restrictions resulting from other laws, including the Endangered Species Act, by avoiding negative impacts to imperiled species from oil and gas activities. This rule will ultimately inure to the benefit of recreationists, conservationists, and sportsmen because it will result in the minimization of adverse impacts to wildlife resources.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rule [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

Operators, including small business owners, will have to comply with restrictions on drilling activities in certain areas for certain periods. Because it is only a spatial restriction on activities, compliance with the proposed regulation does not require new equipment or any other additional requirements. There are thus no direct compliance costs associated with Rule 1209.

An operator may, in some circumstances, incur additional costs associated with a spatial restriction on surface occupancy when the operator seeks to directionally drill from outside the area of restricted surface occupancy. This additional cost is estimated to be minimal in comparison with the ultimate economic recovery from the oil and gas well; in fact, the operator would likely not undertake directional drilling if the cost of doing so is not outweighed by the economic benefit. Aware of this potential, the proposed regulations provide several ways by which an operator may avoid the application of the surface occupancy limitations in Rule 1209. For example, an operator may develop and seek acceptance of a Comprehensive Drilling Plan. An operator may also initiate consultation with OGCC and state wildlife officials to negotiate conditions of approval that could provide relief from the applicability of Rule 1209. Advance planning through Comprehensive Drilling Plans or consultation would likely result in some additional cost to an operator, although these would be undertaken at the operator's discretion presumably in cases where the costs of doing so are determined to be less than the cost of complying with Rule 1209. Moreover, this requirement would apply to oil and gas development largely in the Piceance Basin, and directional drilling is already widely used in that basin on over 90% of wells.

Moreover, the rule could result in costs associated with lost or deferred opportunity. Aware of the potential that the proposed regulation would result in direct and/or opportunity costs, we requested on April 11, 2008 information from over 50 oil and gas operators about potential specific costs of compliance with Rule 1209 (among other rules). To date, we have not received any response from representatives of the oil and gas industry to this request for information. It is therefore difficult to accurately estimate the direct or opportunity costs associated with compliance with Rule 1209. This rule is expected to have minimal impact on economic competitiveness, job creation, or state revenues.

Where an operator does not seek a variance from the provisions of Rule 1209, there should be little or no government cost associated with this regulatory provision. Where an operator seeks a variance from the timing limitations, government costs would accrue as a result of consultations undertaken on a particular permit application. In addition, an operator may opt to develop a Comprehensive Drilling Plan in order to arrive at presumptive conditions of approval that could excuse compliance with restricted occupancy areas in certain circumstances, and development and acceptance of this Comprehensive Drilling Plan would result in government costs. The government costs associated with consultation and processing Comprehensive Drilling Plans are set forth in the cost benefit analyses for Rule 306 and 216. As set forth in those Cost-Benefit Analyses, the government costs from these processes are not likely to be significant and represent reviews that would otherwise take place on a permit-specific basis.

- 4) *Please describe any adverse effects of the proposed rule (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

All oil and gas operators wishing to conduct activities in the identified habitats will be required to comply with the proposed regulation, including small businesses. This regional specificity is necessary because the identified species are not found in all areas of Colorado. Our analysis to date indicates that it would apply to oil and gas development activities primarily in the Piceance Basin, and that directional drilling is already widely used there. Because of the extremely limited geographic scope of the restricted occupancy areas, and because there are avenues for advanced planning and/or consultation with state officials, operators should be available to avoid the application of Rule 1209 in a way that could cause significant adverse effects on small businesses, consumers, or private markets. Because it is simply a limitation on surface occupancy in certain areas, the proposed regulation does not require the operator to implement new procedures -- it only requires the operator to refrain from certain drilling activities. The proposed regulation could encourage operators to seek to avoid the applicability of Rule 1209 by engaging in broader planning through Comprehensive Drilling Plans or site-specific consultation with the OGCC and wildlife officials. Again, these steps would be taken at the operator's discretion and in cases where the costs of doing so are determined to be less than the cost of complying with Rule 1209. For these reasons, the rule is not expected to have more than a minimal impact on small businesses, consumers, or private markets.

- 5) *Please compare the overall benefits and costs of the proposed rule to alternative approaches to address the proposed rule objective and explain why the alternative was rejected in favor of the proposed rule. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

We considered a variety of options, including taking no action, making operational requirements optional through best management practices, and making restricted surface occupancy areas or periods larger.

Oil and gas activities may reduce the quantity of habitats, degrade the quality of habitats, or make portions of key habitats unavailable for certain species because of behavioral avoidance. These will, in turn, have adverse impacts on wildlife resources. Failing to take the proposed regulatory action would result in adverse impacts to wildlife resources. In addition, failing to take the proposed actions could lead to more severe drilling or development restrictions resulting from the application of other laws, including the Endangered Species Act. For these reasons, we declined to adopt the no action alternative.

We considered allowing operators to come up with their own mitigation and then to enter into negotiations with state wildlife officials, but we determined that this would be more time intensive, require the expenditure of more government time and effort, and result in substantial uncertainty on the part of industry.

Finally, we considered larger areas of restricted occupancy and additional areas for other species. We rejected this alternative because we did not feel it represented the proper balance between fostering the development of oil and gas resources and protection of public health, safety, and welfare, including the environment and wildlife resources.

Colorado Oil and Gas Conservation Commission
Cost-benefit / Regulatory analysis

- Rule(new/amended) – Subject:
- 100(amended) – SERIES DEFINITIONS
 - 302(amended) – REGULATIONS FOR OIL AND GAS OPERATIONS;
 - 306b(amended) – CONSULTATIONS;
 - 324B(amended) – EXEMPT AQUIFERS;
 - 502(amended) – PROCEEDINGS NOT REQUIRING THE FILING OF AN APPLICATION;
 - 505 (amended) – REQUIREMENTS OF PUBLIC HEARING;
 - 510(amended) – STATEMENTS AT HEARING;
 - 511(amended) – UNCONTESTED HEARING APPLICATIONS;
 - 515(amended) – EX PARTE COMMUNICATIONS;
 - 516(amended) – STANDARDS OF CONDUCT;
 - 517(amended) – REPRESENTATION AT ADMINISTRATIVE AND COMMISSION HEARINGS;
 - 519(amended) – APPLICABILITY OF COLORADO COURT RULES AND ADMINISTRATIVE NOTICE;
 - 520(amended) – TIME OF HEARINGS AND HEARING/CONSENT AGENDA;
 - 522(amended) – PROCEDURE TO BE FOLLOWED REGARDING ALLEGED VIOLATION;
 - 524(amended) – DETERMINATION OF RESPONSIBLE PARTY;
 - 525(amended) – PERMIT RELATED PENALTIES;
 - 526(amended) – ADMINISTRATIVE HEARING IN UNCONTESTED MATTERS;
 - 527(amended) – PREHEARING PROCEDURES FOR CONTESTED ADJUDICATORY PROCEEDINGS BEFORE THE COMMISSION
 - 528(amended) – CONDUCT OF ADJUDICATORY HEARINGS;
 - 529(amended) – PROCEDURES FOR RULEMAKING PROCEEDINGS;
 - 530(amended) – INVOLUNTARY POOLING PROCEEDINGS;
 - 602(amended) –GENERAL SAFETY REGULATIONS;
 - 909(amended) – SITE INVESTIGATION; REMEDIATION; AND CLOSURE;
 - 911(amended) – PIT, BURIED OR PARTIALLY BURIED PRODUCED WATER VESSEL, BLOWDOWN PIT AND BASIC SEDIMENT/TANK BOTOM PIT MANAGEMENT REQUIREMENTS PRIOR TO DECEMBER 30, 1997;
 - 1001(amended) – INTRODUCTION TO RECLAMATION REGULATIONS;
 - 1101(amended) – PIPELINE INSTALLATION AND RECLAMATION;
 - 1102(amended) – PIPELINE OPERATIONS, MAINTENANCE AND REPAIR;
 - 1201(new) – PROTECTION OF WILDLIFE RESOURCES – PURPOSE

1) *Please provide*

a) *a description of the proposed rules,*

b) *a description of the motivation for the proposed rules; [C.R.S. § 24-4-103(2.5)(a)(I)]*
and

c) *a reference to the statute(s) providing authority for the proposed rules.*

A detailed description of the proposed rules can be found in the respective sections of the COGCC draft rules. The changes being proposed by the following rules all seek to make technical changes ranging from spelling and grammar corrections to clarifying interpretation of certain terms or practices. These proposed changes seek to provide regulatory clarity to ensure that entities subject to these rules can clearly understand their regulatory obligations and rights. C.R.S. § 34-60-105 provides the statutory authority to the COGCC to make these types of technical changes.

2) *Please provide*

- a) *a description of the parties expected to benefit from the proposed rules [C.R.S. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the benefits expected to accrue to those parties. [C.R.S. § 24-4-103(2.5)(a)(II), (4.5)(a)(II)]*

Any interested party or stakeholder will benefit from these proposed changes. For example, those rules that seek to clarify traditional interpretation or practices will ensure that entities subject to the regulations and those enforcing them will have the same expectations. Further, these technical improvements make the rules easier to understand and implement. It is possible there will be fewer conflicts resulting in requests for administrative or legal action as a result of these proposed clarifications recognizing there will be less confusion or room for different interpretation on regulatory rights and obligations.

3) *Please provide*

- a) *a description of the parties expected to incur costs as a consequence of the proposed rules [C.S.R. § 24-4-103(4.5)(a)(I)] and*
- b) *an assessment of the costs expected to be incurred by those parties, including an explicit statement of probable costs to the regulated community, the economy, economic competitiveness, job creation, agencies responsible for implementation and enforcement, and anticipated effect on state revenues. [C.R.S. § 24-4-103(2.5)(a)(III), (2.5)(a)(IV), (4.5)(a)(II), (4.5)(a)(III)]*

There are no costs that will be incurred as a result of these proposed rules changes.

4) *Please describe any adverse effects of the proposed rules (costs and/or benefits) upon small businesses, consumers, private markets, and / or particular geographic regions. [C.R.S. § 24-4-103(2.5)(a)(IV)]*

There are currently no adverse effects on small business, consumers, private markets, and/or particular geographic regions as a result of these proposed technical clean up provisions.

- 5) *Please compare the overall benefits and costs of the proposed rules to alternative approaches to address the proposed rules objectives and explain why the alternatives were rejected in favor of the proposed rules. [C.R.S. § 24-4-103(2.5)(a)(V), (4.5)(a)(IV), (4.5)(a)(V), (4.5)(a)(VI)]*

These proposed rule changes are best addressed in this format. Taking no action and simply leaving these provisions as they are would result in regulatory uncertainty and needless conflict. There are no costs associated with this approach which enhances the benefit to all interested parties and stakeholders. Further, it would not be possible for a voluntary standard or market based alternative to remedy technical clean up provisions within these rules.