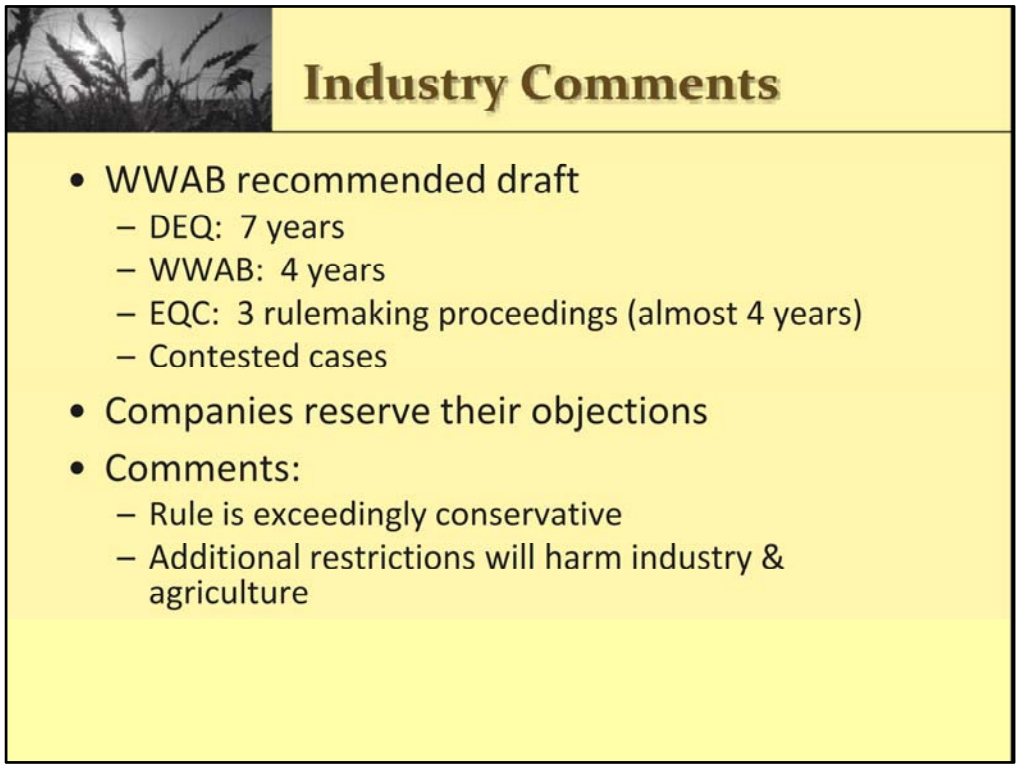
Agricultural Use Protection

Department of Environmental Quality
Surface Water Quality Standards
Chapter 1, Section 20 & Appendix H

Petroleum Association of Wyoming
October 28, 2008
Hearing Presentation

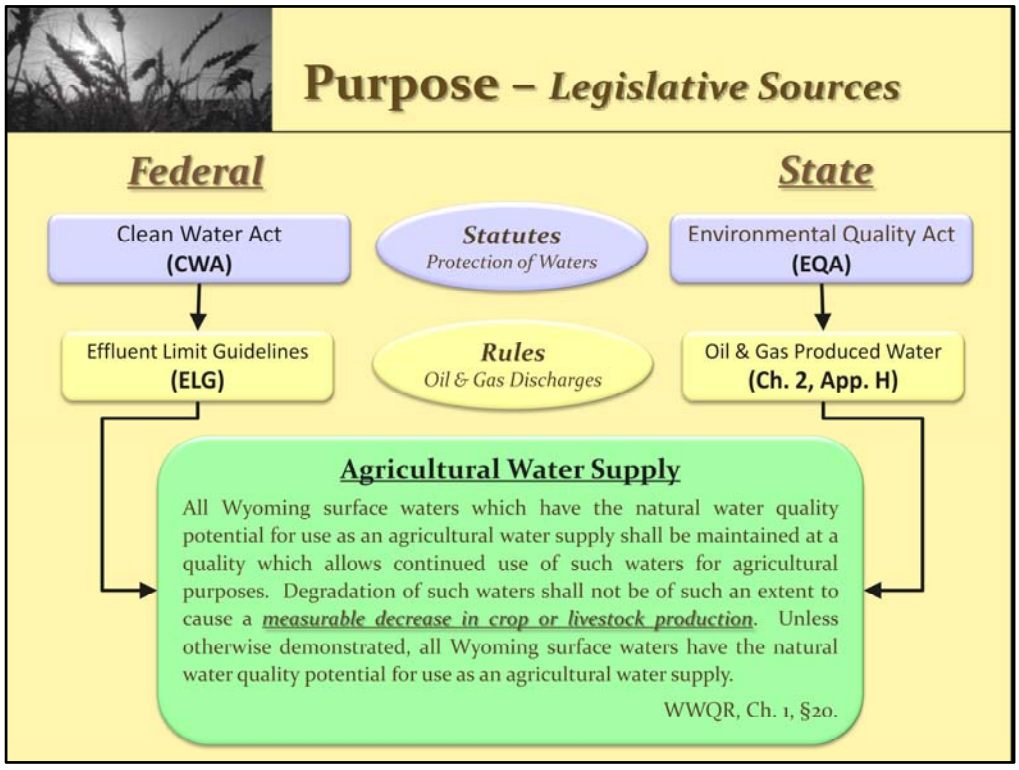


The Petroleum Association of Wyoming, representing the oil and gas industry, has submitted specific objections to the rule during the written comment period. Individual oil and gas companies, especially including those that produce coal bed methane, also have or will submit specific comments to the rule and each reserves their arguments for how the rule should be changed. However, as an industry, we recognize that the current version of the rule is the outcome of a great deal of work by the Department of Environmental Quality ("DEQ") and the Water and Waste Advisory Board ("WWAB"), including numerous rounds of public comments and years of hearings. Throughout this time, companies producing coal bed methane have adapted to the provisions of the rule, which have been implemented and enforced as policy for several years now. We also understand that it is difficult to change the rule at this point in the process. Therefore, our presentation today focuses on the reasons the rule is protective of agriculture and, in fact, exceedingly conservative. Any further change that makes the rule more stringent and/or less flexible will put oil and gas development projects and existing production at further risk. The result to agriculture will be less water available for their operations; thus, actually causing harm to the industry that these rules are supposed protect.

Please keep in mind, while many of our comments focus on CBM production, with some discussion of conventional oil production, this rule is a surface water quality standard that applies state-wide and prospectively. ANY discharges to waters of the state that have use for agriculture will be subject to these standards. All types of WYPDES permits issued on or after January 1, 1998, including those held by CBM producers, conventional oil and gas producers, mines, and municipalities, are or will be affected.

Overview

- Purpose – Enhance & Protect Agriculture
- Rulemaking – Balancing
  - Statutory Criteria
  - Economic Effects of Regulation
- Appendix H is Protective & Conservative
  - Livestock Standards
  - Irrigation Standards
- Conclusion



Federal

•CWA purpose: "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." 33 USCS §1251 (a).

- •States and public should be involved in the development of water quality standards under the act. 33 USCS §1251 (b), (e).
- •Act does not abrogate states' rights to regulate water quantity, including water rights and beneficial use. 33 USCS §1251 (g).

•ELG: Water produced from oil and gas operations west of the 98th meridian can be discharged produced water into "navigable waters" for use in agriculture or wildlife propagation. 33 U.S.C. §1342; 40 C.F.R. §435.50.

- •"Use in agriculture or wildlife propagation" means that the water is "of good enough quality" to allow it to be used for 1) wildlife, 2) livestock watering, or 3) other agricultural uses; and that the water "is actually put to such use during periods of discharge." 40 C.F.R. §435.51(c).
- •CBNG produced water is unaltered groundwater, while traditionally produced water has been water produced with oil and separated by mechanical and chemical means.

State of Wyoming

•EQA: A permit is needed to discharge "pollution" to or to alter the physical, chemical, radiological, biological or bacteriological properties of any *waters of the state*. Wyo. Stat. § 35-11-301).

•Wyoming Pollution Discharge Elimination Permit (WYPDES) rules require the water be of good enough quality to be consumed by livestock and wildlife (Ch. 2, App. H)

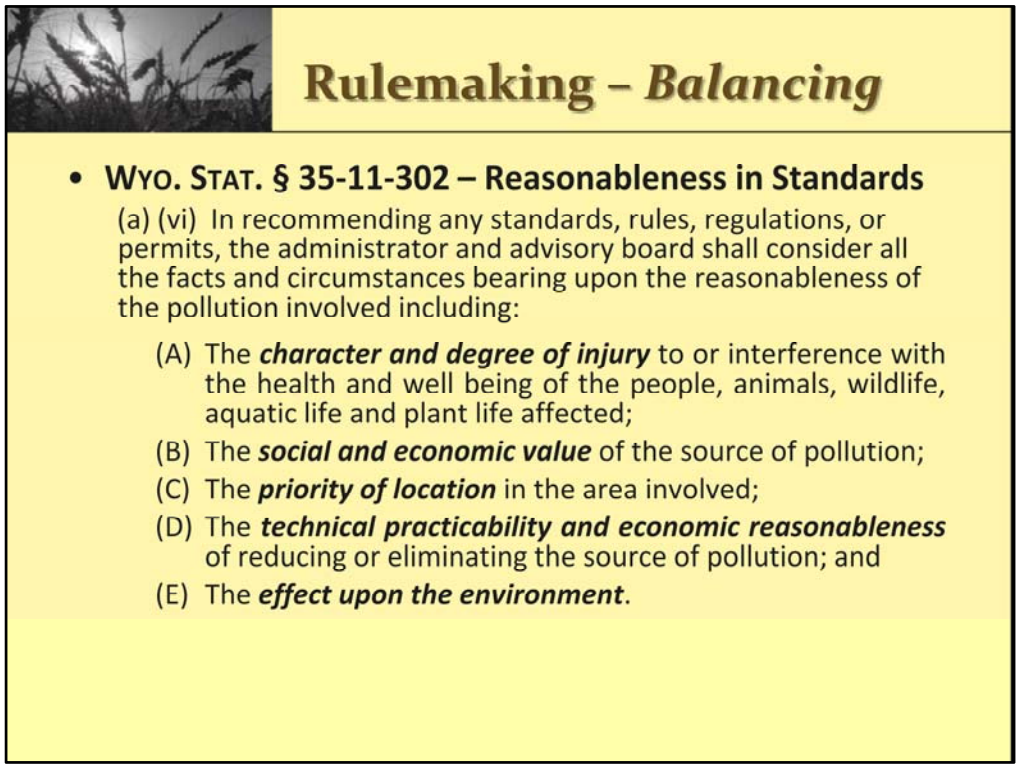
•Chapter 1 – Water Quality Standards for all "pollution" of waters of the state

- •Section 20, Agricultural Water Supply
  - •Narrative Standard: shall not "cause a measurable decrease in crop or livestock production."
  - •The Ch. 1, App. H rule is intended to give DEQ a guideline for implementing the Ch. 1, Sec. 20 standards. The Ch. 1, Sec. 20 standard is still the law and this rule cannot amend or expand it.

Purpose – *Enhance & Protect*

- Federal Rules (ELG):
  - To enhance opportunities for agriculture and wildlife propagation
  - Allow discharges of produced water where surface water is scarce
- State Rules:
  - To protect *existing* agricultural uses of surface waters
  - **NO MEASURABLE DECREASE** *in crop or livestock production*

We know that the state rules protect existing agricultural uses because the standard used for that protection is “no measurable decrease.” There cannot be a decrease where there was nothing existing previously.



Many who presented technical testimony on Friday of last week stated they could not make a call on where to set water quality standards; these are policy decisions that are best made by the regulators. They did not dodge the question, rather, they properly deferred to the important regulatory processes of weighing costs versus benefits and performing risk analyses. This concept must play a key role in legislative decisions, including rulemaking, or the practical effect of water quality standards could be the strangulation of economic growth and social freedoms.

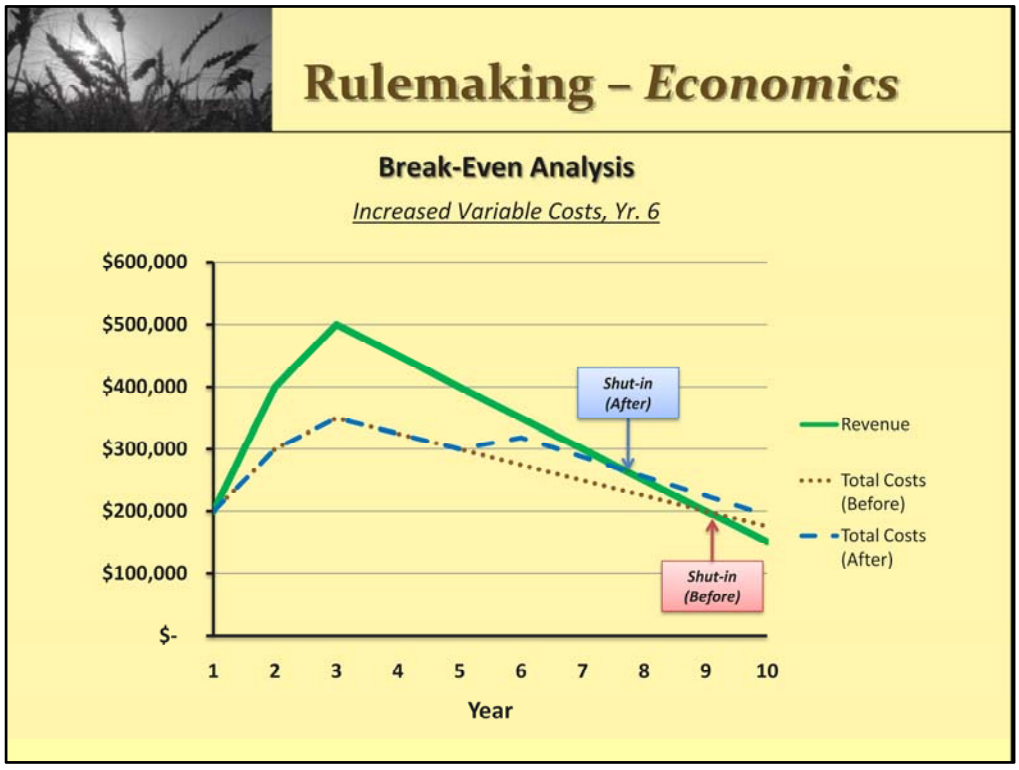
The Wyoming Legislature recognized this fact when it enacted the Environmental Quality Act and instructed the division administrator and advisory boards to consider "all the facts and circumstances bearing upon" the reasonableness of the pollution and associated water quality regulations. The provisions related to Water Quality standards are found in Wyo. Stat. § 35-11-302.

The Council must apply these "balancing criteria" in promulgating water quality standards, in addition to the statutory requirements for public involvement. Under the CWA (federal), public participation must be provided for, and the EQA requires the Council to abide by the Wyoming Administrative Procedures Act, including specific provisions for the solicitation and consideration of public comment.

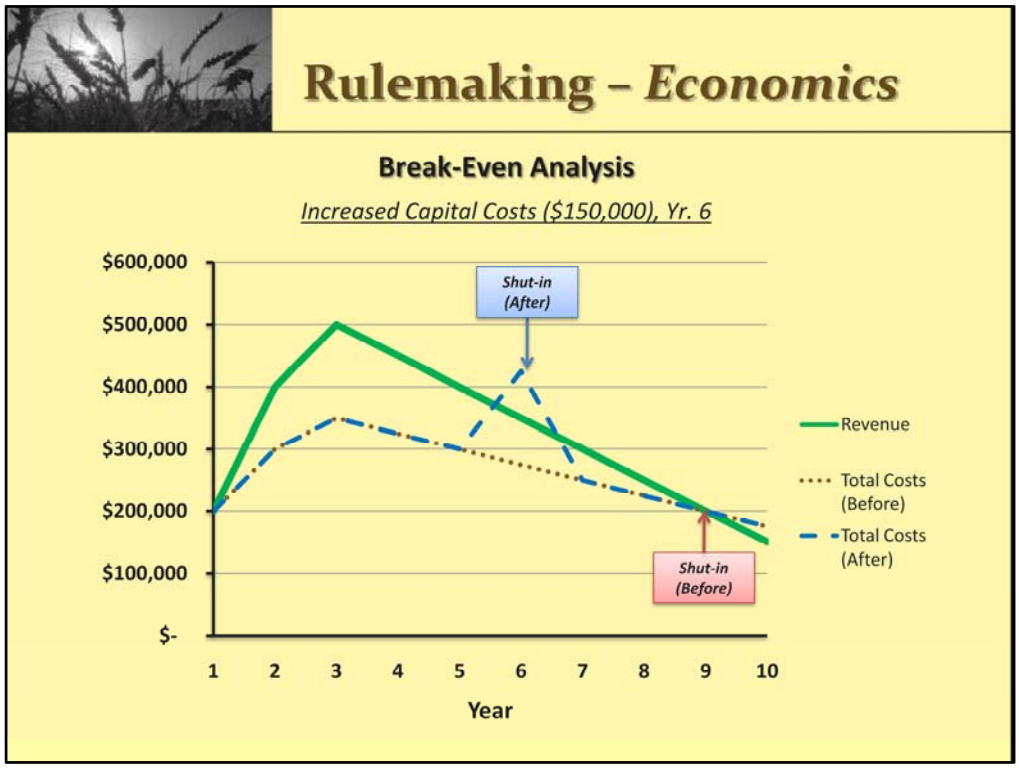
There are various ways in which regulations can have social and economic impacts. In Wyoming, where minerals dominate the state economy, the concern you often hear is that more stringent regulations may result in reduced development and state tax revenues. Local governments, especially counties, are also significantly impacted by any reduction in mineral production and ad valorem tax revenue. Of course, increased regulation does have the effect of increasing costs/reducing profits for mineral companies. However, these rules, while aimed at regulating industry, may also effect the economics of agricultural production as well as the social and cultural values that our state holds near and dear.

These issues have been argued in comments to DEQ and the WWAB for years. To date, no comprehensive analysis of the economic impacts of this rule or comparison of relative risks, has been performed. Industry is not in a position to perform this analysis. First, some might suspect bias in in any analysis compiled by industry. Second, industry is not a position to gather the relevant proprietary data necessary for such an analysis, including financial data from competing oil and gas operators, agricultural producers, and small businesses whose survival depends on these industries. Finally, the state is in a better position to access other public data, including various state and local tax revenues, as well as government budget and general economic information.

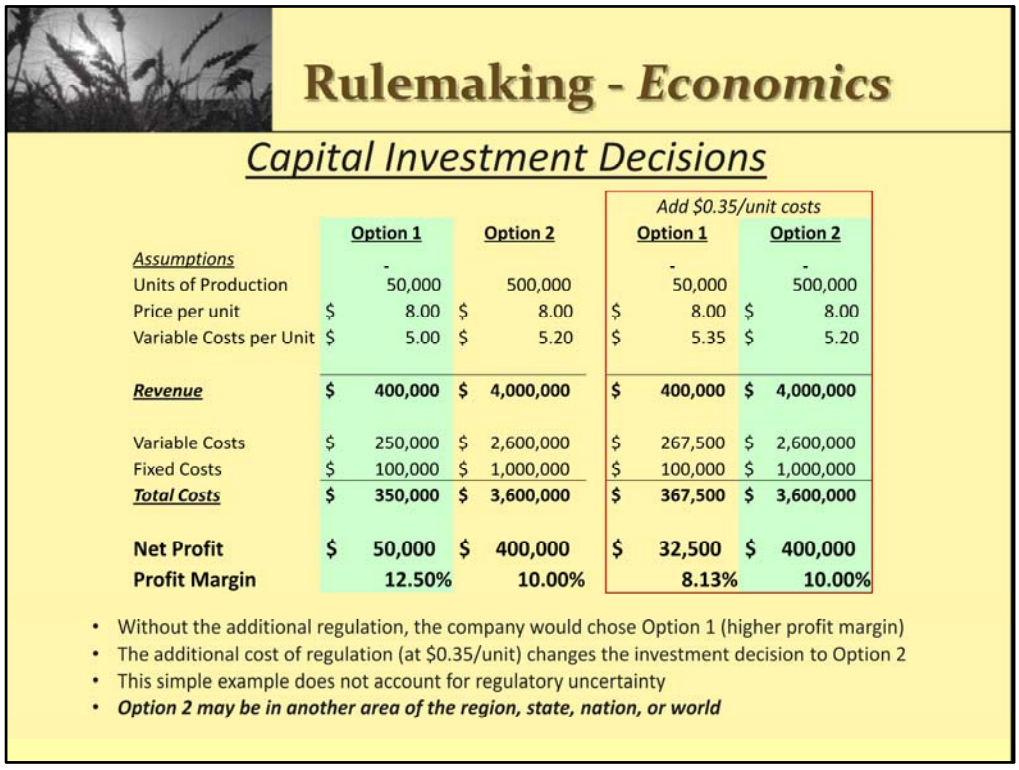
That being said, what we can do is explain the financial decision-making process and the impacts from increasingly stringent and overly conservative regulation. In this case, the rules will affect the economic life of existing production, future development decisions, and the companies' ability to work with landowners to implement the most mutually beneficial water management options.



- Increased variable costs can shorten a well or project's economic life, lead to early shut-in, and result in a waste of oil and gas resources as long as revenue (price per unit) stays level.
- Early shut-in might not occur if the additional cost of the regulation can be passed on to the consumer (e.g. in rising price environments). In this case, oil and gas consumers bear the cost of the increased regulation through increased heating costs. (These numbers are only a simple example – they have not come from any actual analysis).



- Increases in fixed costs can cause even earlier shut-in decisions.
- If a company has to invest an additional $150,000 in capital improvements in year 6 to comply with more stringent regulations, , for a loss of $75,000, and it would make profits in the next three years of $50,000, $25,000, and $0, it is wiser to shut-in the production rather than making the capital investment expected to have no net return over the next 3 years (and falling below the break even point after that). (These numbers are only a simple example – they have not come from any actual analysis).



Rulemaking - *Economics*

Capital Investment Decisions

					Add $0.35/unit costs	
	Option 1		**Option 2**		**Option 1**	**Option 2**
Assumptions	-		-		-	-
Units of Production	50,000		500,000		50,000	500,000
Price per unit	$ 8.00	$	8.00	$	8.00	$ 8.00
Variable Costs per Unit	$ 5.00	$	5.20	$	5.35	$ 5.20
Revenue	**$ 400,000**	**$**	**4,000,000**	**$**	**400,000**	**$ 4,000,000**
Variable Costs	$ 250,000	$	2,600,000	$	267,500	$ 2,600,000
Fixed Costs	$ 100,000	$	1,000,000	$	100,000	$ 1,000,000
Total Costs	**$ 350,000**	**$**	**3,600,000**	**$**	**367,500**	**$ 3,600,000**
Net Profit	**$ 50,000**	**$**	**400,000**	**$**	**32,500**	**$ 400,000**
Profit Margin	**12.50%**		**10.00%**		**8.13%**	**10.00%**

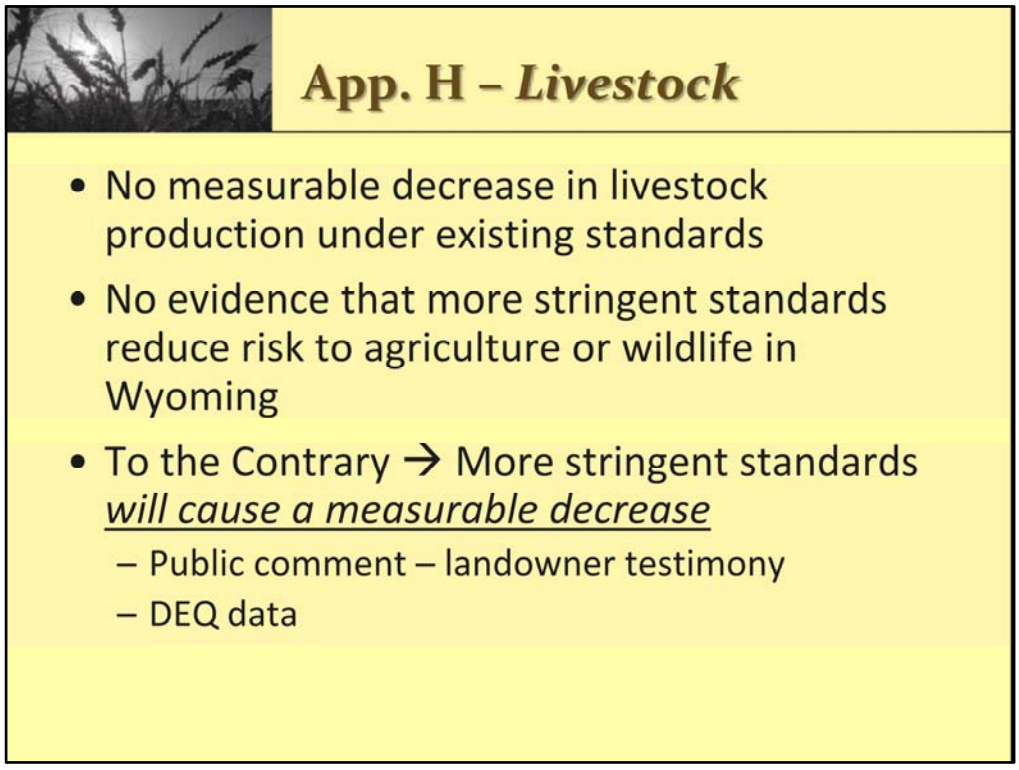
- Without the additional regulation, the company would chose Option 1 (higher profit margin)
- The additional cost of regulation (at $0.35/unit) changes the investment decision to Option 2
- This simple example does not account for regulatory uncertainty
- ***Option 2 may be in another area of the region, state, nation, or world***

All companies have limited resources – even more so in these chaotic financial times. Above is a simple example of the types of investment decisions made by a company when determining where to invest their capital. The example above illustrates how a slight increase in variable cost (as illustrated above, 7%), can affect decisions for future development. (Again, these numbers are only a simple example – they have not come from any actual analysis).

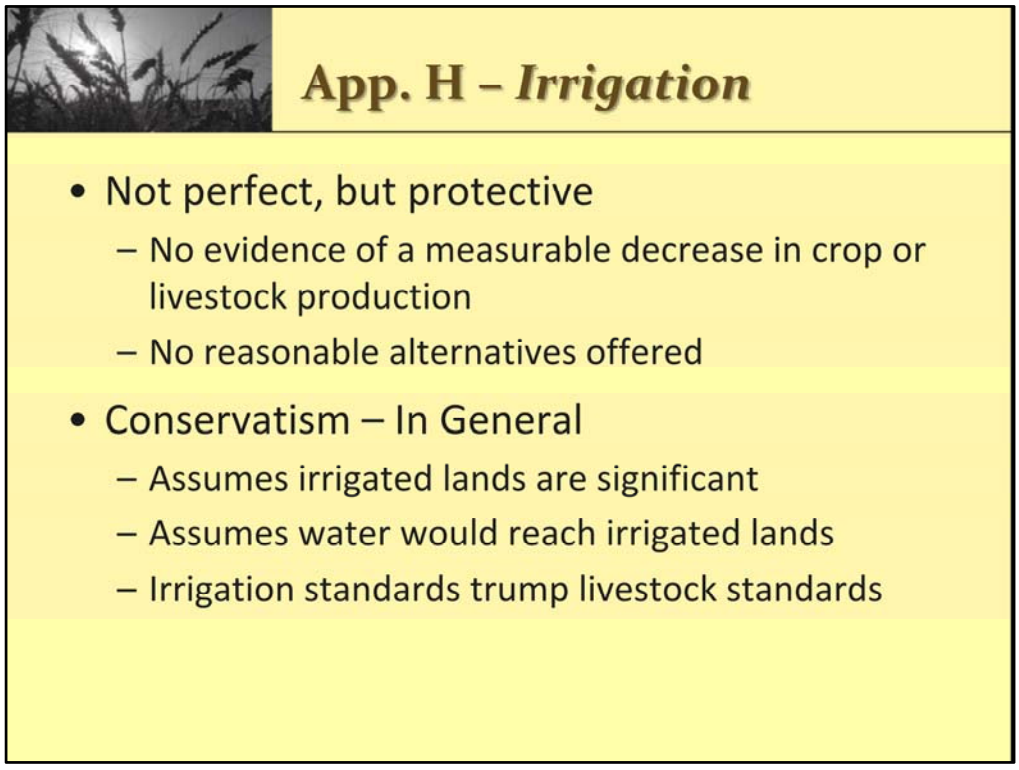
Oil and gas has tremendous economic value to the state and social value in providing jobs and business opportunities to local communities and across the state. In 2007, mineral production accounted for nearly 80% of assessed valuation, while agriculture added approximately 1%.i

APPENDIX H

- Protective
- Conservative



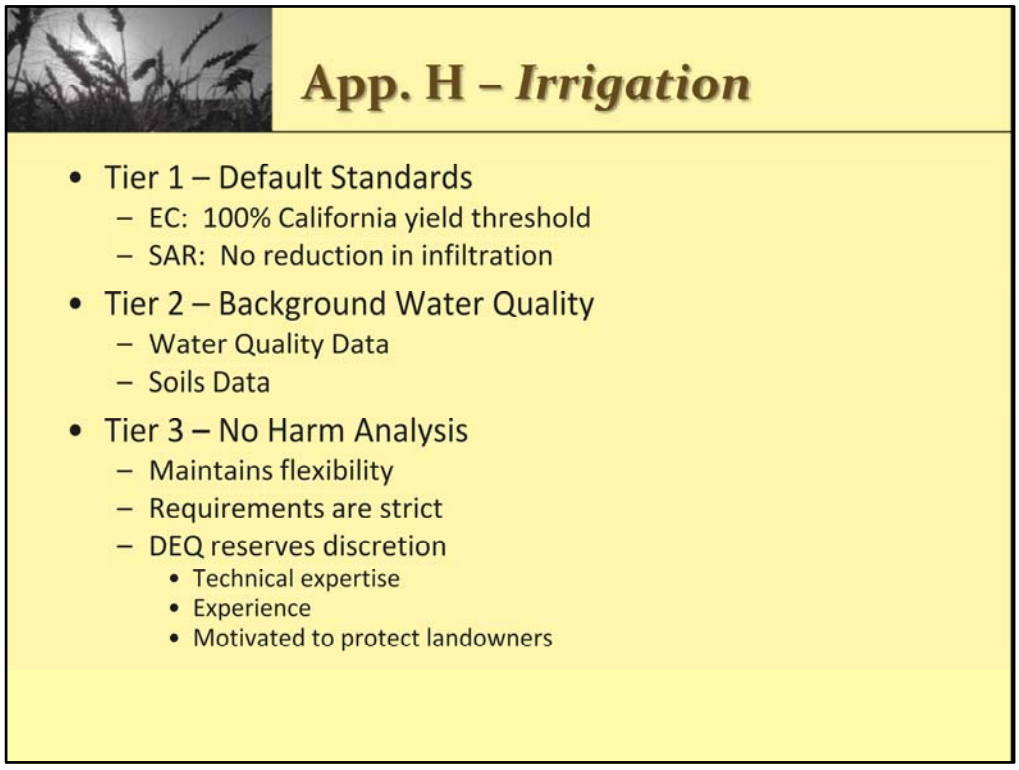
- As DEQ has noted, there has been no measurable decrease in livestock production under the current standards.
- Dr. Raisbeck's report, while it was the first step in analyzing the body of literature concerning livestock drinking water, was not a comprehensive risk analysis and should not be used to set regulatory standards. As Dr. Raisbeck stated, he is not a policy maker and the choice of standards lies with the regulators, not professors. Dr. Raisbeck's report focused on the lowest level that any effect could be observed in the study subjects, it did not focus on the levels at which a measurable decrease occurred in livestock production. As Penny Hunter explained, there is no evidence that Dr. Raisbeck's standards reduce the risk of a measurable decrease in livestock production – which is the purpose of the standards.
- To the contrary, more stringent standards would cause a measurable decrease in livestock production. Public comment from landowners in the Big Horn Basin and the Powder River Basin clearly demonstrates that the water in both areas is used for the improvement or survival of agricultural operations across the state.
- DEQ supports retaining the existing standards and there was virtually no comment on this subject during the WWAB's evaluation of the standards.
- If the standards were made more stringent and the grandfathering clause did not survive EPA and/or legal scrutiny, many landowners would lose the use of the water they rely upon.
    - Big Horn Basin – agricultural operations have relied upon the water for decades.
    - Powder River Basin – water helped operations survive the drought and improves range management.



- The irrigation standards contained in Appendix H are certainly not perfect, but they are protective. There has been no evidence of any injury to crops, people, animals or wildlife from 10+ years of discharges under far less stringent standards than those contained in the current draft of Appendix H.

- In addition, there was very little comment to the WWAB requesting more stringent irrigation standards since the EQC's remand. The issues raised by Drs. Munn, Paige, and Vance questioning the procedures under the rule have not been raised previously. In fact, Drs. Munn and Paige participated in the process of developing the procedures. In the recent attacks on Appendix H, no reasonable alternatives were offered.

- The basic assumptions in the rule make the irrigation standards exceedingly conservative. First, the rule assumes naturally irrigated lands are significant to agricultural production if there are 20 acres in the entire drainage, and even protects areas where the "natural irrigation" is caused by illegal obstructions in the channel. Second, it assumes the water discharged by CBNG producers would reach irrigated lands, undiluted, which is rarely the case. Finally, the rule gives preference for forage growing on the irrigated lands and does not account for the net environmental benefit of having livestock water flow down the channel. Even William Maycock's expert witness, Dr. James Bauder, testified that having livestock water would benefit the ranch more than the possible loss of forage.



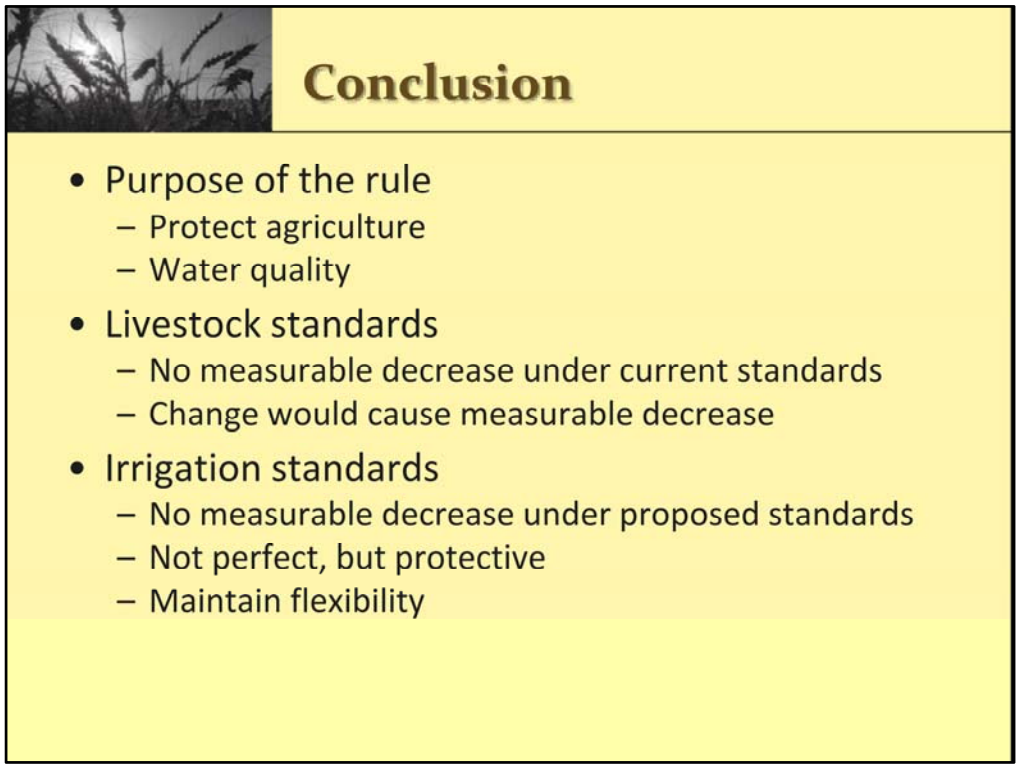
- **Tier 1** standards are not reasonable under the mandatory balancing criteria. They are based upon the most conservative assumptions, which reflect unreasonable expectations for crop production/native plant growth in Wyoming.

- **Tier 2** is needed to preserve flexibility in the rule. There is also no evidence of <u>any</u> injury to crops, people, animals or wildlife from discharges under permits with limits derived using the Tier 2 process, which has been used for several years now. Removing the Tier 2 option would be akin to removing the grandfathering clause for livestock standards.

    - <u>Background water quality data</u>: Where available, this is the easier option for establishing effluent limits and, where available, industry is always willing to use this option. However, for most streams in the Powder River Basin (and the rest of Wyoming), there is not a large enough data set to determine background water quality for ephemeral streams. In addition, the use of such data has been attacked in the past as insufficient for setting permit limits (whether collected for the stream where the discharge is located or on analog streams), including in the permit appeals filed by Swartz and in recent comments submitted by PRBRC in this rulemaking proceeding.

    - <u>Soils data</u>: There are numerous layers of conservatism built into this process, which are demonstrated in Kevin Harvey's testimony.

- **Tier 3** should be included to preserve flexibility, as well. DEQ retains the ability to exercise discretion under this provision and there are significant burdens placed upon industry.



- Excessively "conservative" standards, such as a statewide numeric standard of 1330 for EC and 5 for SAR or limiting permit limits to the Tier 1 defaults, will harm agriculture. Oil and gas companies are not in the business of producing and discharging water. If such standards are imposed, the options for water discharges in most cases would be limited to reinjection (if possible), off-channel storage, treatment, or shut-in production. Under each of these options, agriculture would be harmed.
    - Shut-in production: As discussed previously, limits ongoing opportunities to use the water, leads to economic losses, and potentially wastes oil and gas resources.
    - Reinjection: Removes the water from the surface, preventing any agricultural use. (Note, the fact that water has been brought to the surface is a significant benefit for most agricultural producers and for wildlife).
    - Off-channel storage: Causes the additional environmental damage of an off-channel reservoir, which limits the ability to use the water, takes land out of production, and creates reclamation challenges (versus on-channel reservoirs, which can be used after CBM production is over).
    - Treatment: Removes water from the land on which it was produced, routing the water to central treatment facilities, depriving the landowner of the opportunity to use the water for the benefit of his or her operation. In addition, most treated water is routed to the mainstem and will flow to Montana rather than being kept in the state for local use.

Conclusion

Overly conservative standards do not reduce risk – **they harm agriculture & the economy.**