

November 10, 2009

Environmental Quality Council
122 W. 25th Street
Herschler Building, Room 1714
Cheyenne, WY 82002

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Jim Ruby, Executive Secretary
Environmental Quality Council

Re: Comments on the EQC's Expert Scientific Opinion on the Tier-2 Methodology

Dear Members of the EQC:

On behalf of Anadarko Petroleum Corporation, Lance Oil and Gas Company, Inc., Marathon Oil Company, Petro-Canada Resources (USA) Inc., and Williams Production RMT Company, we appreciate the opportunity to provide comments on the EQC's Expert Scientific Opinion on the Tier-2 Methodology. Our comments are attached.

Thank you for your consideration.

Very truly yours,



Jack D. Palma, II, P.C.
of Holland & Hart LLP

Enclosure

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**COMMENTS OF ANADARKO PETROLEUM COMPANY AND LANCE
OIL AND GAS COMPANY, INC., MARATHON OIL COMPANY, PETRO-
CANADA RESOURCES (USA) INC., AND WILLIAMS PRODUCTION
RMT COMPANY ON THE EQC'S EXPERT SCIENTIFIC OPINION
ON THE TIER-2 METHODOLOGY**

These comments respond to the EQC's request for comment on the "Expert Scientific Opinion on the Tier-2 Methodology" (Hendrickx and Buchanan, May 2009) ("Tier 2 Opinion"). On September 23, 2009, the Department of Environmental Quality ("DEQ" or "the Department") notified EQC that the Department had received an additional report prepared by Drs. Hendrickx and Buchanan and, based on that report, is withdrawing the proposed rule to implement Chapter 1, Section 20 of its water quality rules and regulations.

DEQ's request and this new information compel suspension of the rulemaking before the Council. The Council has no authority to act on a withdrawn proposed rule. The new report raises many new technical issues (and contains technical and factual errors) that underscore the absolute necessity for further proceedings before the Department and, perhaps, the Water and Waste Advisory Board ("WWAB"). Accordingly, these comments are submitted for the record in accordance with the Council's request, but are submitted in the context of the second report, which focuses principally on the management of water quantity rather than the water quality provisions contained in the DEQ's earlier rule making package. This shift has significant implications for the DEQ and the regulated community and raises fundamental legal questions regarding the scope and limits of the DEQ and EQC's statutory authority.

This letter is organized to provide an overview of our response to the Hendrickx and Buchanan reports, followed by specific technical and legal comments with respect to water quantity and water quality issues, and finally a proposed path forward to resolve these issues and develop an appropriate regulatory process. Dr. Eric Kern and Dr. Lewis Munk of Golder Associates Inc. have assisted in the preparation of technical comments in response to the Hendrickx and Buchanan reports.

BACKGROUND

It is important to remember the context for the EQC's Agricultural Use protection rule-making. The goal of the proposed rule is to provide a means for translating into numeric effluent limits the federally approved narrative standard set forth in Chapter 1, Section 20. Any new rule therefore must recognize that Section 20 permits some degradation of surface waters, so long as that discharge does not "...cause a measurable decrease in crop or livestock production." Chapter 1, Sec. 20 was written that way to maximize the beneficial use of water and to foster development, while protecting currently existing agricultural uses. The Agricultural Use Protection Rule should provide a legally and scientifically valid method of implementing the Chapter 1, Section 20 narrative standard within this context.

The protection of agricultural water supplies under the point source discharge program necessarily encompasses a high degree of complexity and variability with respect to both agricultural management practices and agricultural water quality and availability. The Chapter 1, Section 20 narrative standard is effective in protecting agricultural water supplies because it provides for the flexibility to develop point source discharge permits that address the many site-specific factors unique to individual geographic areas and management scenarios in Wyoming. The Chapter 1, Section 20 narrative standard was developed to provide for protection of agricultural water supplies, with the understanding that implementation of the standard will necessitate utilization of diverse approaches due to this inherent variability.

Thus, by its very nature, the Chapter 1, Section 20 narrative standard appropriately challenges efforts to develop a simple fix or a "one size fits all" approach to implementation. Instead, the answer lies in a collaborative effort to create a regulatory framework responsive to the issues that arise in implementing the standard. These are issues that have challenged the regulators and the regulated community for years and they require that we start with a clear understanding of the technical facts and the regulatory law. Our comments are offered in this vein, to provide helpful information and to offer alternatives for addressing the principal issues of concern.

RESPONSE TO ISSUES REGARDING WATER QUANTITY

The DEQ and EQC have very limited jurisdiction over water quantity. While we have significant disagreements with the conclusions reached by Hendrickx and Buchanan in their September 2009 Report, if that report is to be given any weight by the EQC or the DEQ, the conclusion that **“the true problem is the quantity of CBM waters rather than its quality,”** must be considered within the confines of the agencies’ jurisdiction. See Hendrickx & Buchanan September 2009 Report, Executive Summary, ii (emphasis in original). Hendrickx and Buchanan suggest that because Tier 1 and 2 allow “uncontrolled and unmanageable releases of CBM waters” they are not protective of agricultural uses. September 2009 Report, p. 20. We submit that releases of CBM water are neither uncontrolled nor unmanaged, and further, that the authority to discharge CBM water arises not from the application of Tier 1 or Tier 2, but from Wyoming law.

The solution proposed by Hendrickx and Buchanan is to “abandon uncontrolled releases of CBM water into the drainages” [i.e., limit water quantity, without regard to the quality of the water], and to rely on “appropriate management practices [downstream of the discharge point] to control salinity.”¹ September 2009 Report, p. 21. These conclusions are not indisputable. But, even if these opinions are given weight by the agencies, the difficulty with the consultants’ recommendations is that neither water quantity nor downstream management of water on third-party lands are matters over which either the DEQ or the EQC have jurisdiction.

Importantly, neither DEQ nor EQC (nor WYPDES permittees) can control the actions of potential downstream users of CBM produced water whose lands are adjacent to watercourses that receive CBM discharge water. These landowners are not subject to a DEQ permitting process and their actions—in terms of how they manage (or allow management of) the channel, and their irrigation practices—cannot be controlled by the DEQ under the WYPDES permitting

¹ Hendrickx and Buchanan have made further recommendations for additional monitoring. These types of recommendations are being considered by Director Corra, and he has indicated he intends to address potential monitoring through his work group. Importantly, Mr. Corra’s letter recognizes the appropriate scope of such additional monitoring as being to “determine ways, including on-site monitoring, in which the WYPDES permitting program may be able to more effectively regulate CBM discharges.” September 23, 2009 Letter.

process. Thus, to the extent the DEQ or the EQC may believe that Hendrickx and Buchanan have identified bona fide downstream water management issues, the resolution of those issues cannot be addressed solely by DEQ and EQC efforts, because: (1) they require the participation of third parties who are not subject to the regulatory jurisdiction of the agencies; and (2) the agencies lack authority to regulate water quantity in the manner suggested by the consultants.

In a previous rulemaking proceeding involving regulation of CBM discharge water, the limits of the DEQ's and EQC's authority over water quantity issues were directly addressed in the Attorney General's Opinions. In Formal Opinion 2006-001, the Attorney General focused on DEQ's authority to regulate "the impacts to land and water that [are the] result of water quantity rather than water quality" and concluded that "[t]he EQA does not authorize such action." Formal Opinion 2006-001, April 12, 2006, p. 2. The same opinion later emphasized that the "Petitioners want the regulation of water quantity for agricultural use, regardless of the water quality." *Id.* p. 5. The Attorney General concluded that "[t]here is no such authority in the EQA." *Id.* The Attorney General's 2006 Opinion is equally applicable to the "remedy" suggested by Hendrickx and Buchanan to "abandon uncontrolled releases of CBM water" without regard to water quality, because the "true problem" in their opinion is "the quantity of CBM waters rather than the quality."

An informal opinion of the Attorney General provided to then Chairman of the EQC Mark Gordon in 2006 is also relevant in the context of the Hendrickx and Buchanan report. EQC posed the question: "If the quantity of produced water is impacting land quality, does the Council have the authority to regulate the quantity of produced water?" In response, the Attorney General examined the provisions of the Water Quality and Land Quality statutes, and concluded that: "A reading of the plain language of this statute shows that the Council does not have authority to regulate the quantity of water discharged for the sake of land quality." See July 16, 2006 letter from Attorney General Patrick J. Crank to EQC Chairman Mark Gordon, pp. 3-4.

We support efforts by the DEQ to arrive at an appropriate regulatory process for setting effluent limits to protect agricultural uses under Chapter 1 Section 20. Those efforts, however, must be undertaken within the agencies' authority and must address only those water quality issues over which the DEQ and EQC have regulatory jurisdiction under the EQA. The DEQ clearly

recognized its jurisdictional limitations in reaching its conclusion to withdraw the proposed rule from the EQC's consideration. Director Corra's withdrawal letter noted as much by stating that "we believe it is prudent to withdraw the proposed rule and **re-evaluate to what extent the DEQ may or may not be able to address these other factors.**" September 23, 2009 letter from DEQ Director Corra to EQC Chairman Boal (emphasis added).

Lack of scientific demonstration of risks specific to the Powder River Basin. In their September 2009 report, Hendrickx and Buchanan state that "**Tier 2 and Tier 1 methodology has caused a rise of the ground water table that resulted in both 'waterlogging and –most likely-increased soil salinity'**", a process which they term the "twin menace of waterlogging and soil salinity". Their assertions of such impacts are based solely on reports from managed irrigation systems in other parts of the U.S. and foreign countries, and they recommend changes to the regulation of CBM in the Powder River Basin ("PRB") based on such references. However, they present no scientific data for the PRB that suggests the alleged "waterlogging and soil salinity" were caused by the Tier 2 or Tier 1 methodology (or indeed by any qualitative aspect of any WYPDES discharges). Besides their general cautionary recommendations, Hendrickx and Buchanan's opinions are based on a fly-over of the basin and visits to a few selected areas. There is no evidence presented to support the conclusion that CBM discharge has resulted in widespread increases in groundwater table elevation or "waterlogging" in the PRB. Thus, the specific concerns raised and conclusions as to causation are largely based on anecdotal information with no scientific demonstration that systemic damages have occurred or will occur in the PRB related to CBM discharge. Before DEQ takes action in response to the comments provided by Hendrickx and Buchanan, there should be some technical demonstration that the risks presented are indeed valid for the PRB.

First, it is important to understand that no scientific evidence was presented to indicate that widespread increases in the shallow alluvial groundwater table have occurred due to CBM discharge in the PRB. Second, Hendrickx and Buchanan's blanket assumption that any potential increases in groundwater elevation would result in elevated soil salinity and consequently crop yield reductions grossly over-simplifies the complexities of soil-water-plant relationships in ephemeral systems. Hendrickx and Buchanan present a simplistic and narrow view of the potential crop yield response to elevated water tables, whereby these processes would be

correlated to crop yield reductions. We believe a more balanced assessment would have recognized that potential increases in crop yield may be attained with increases in water availability. In the absence of any real data, it is at least as reasonable to consider the relative balance between potential yield increases associated with increased water supply and potential decreases associated with salinity and drainage issues.

RESPONSE TO ISSUES REGARDING WATER QUALITY.

EQC Expert Recommendations for Implementing Section 20 are Not Feasible. In their May 2009 Report, Hendrix and Buchanan reach the following conclusion “**Since it is not scientifically defensible to use Tier 2, the question is how to move forward. The use of Tier 1 can be continued since it is conservative has been accepted by the community. If the water quality requirements of Tier 1 cannot be met, the Irrigation Waiver seems the preferred alternative...**”. However, in their September 2009 Report, Hendrickx and Buchanan suggest that both the Tier 1 and Tier 2 options should be abandoned “**in favor of the Tier 3 methodology that relies on appropriate management practices to control salinity**”. Neither of these recommendations is feasible nor required by the Chapter 1, Section 20 narrative standard.

The rigid approach based only on the “Tier 1” option (as originally proposed in the May 2009 report) might expedite the currently more refined and resource-intensive process of implementing the Chapter 1, Section 20 narrative standard. The Tier 1 approach to deriving effluent limits is based on identification of the crop species in the drainage that has the lowest tolerance to soil salinity, based on data published by the USDA. The published “default” value for soil salinity at which the plant yield begins to decrease (e.g. tolerance threshold) is identified, and the water salinity value that corresponds to that tolerance threshold is selected as the effluent limit for EC. For example, alfalfa has a published soil salinity tolerance threshold of 2,000 $\mu\text{mhos/cm}$ (which, when divided by 1.5 as prescribed in this “conservative” approach, corresponds to an effluent limit for EC of 1,330 $\mu\text{mhos/cm}$). Unfortunately, the effluent limits developed under this process are often below the background quality of the agricultural water supply and thus go well beyond what is required (or legally permissible) to carry out the mandate of Section 20. It is important to recognize that a Section 20 implementation process that offers flexible departure from default effluent limits may be complex and variable across individual

permits, but it will also be a more accurate reflection of the complexity and variability inherent in site-specific conditions across Wyoming.

The recommendation that CBM water management be restricted to managed irrigation through the Tier 3 option (as proposed in the September 2009 report) is simply not appropriate as the only solution in the PRB. Development of a large scale managed irrigation system is dependent upon a reliable and persistent water supply. Even if we accept the flawed assumption that CBM discharge would constitute a reliable water source, the development of a sustainable irrigation system requires soils and drainage conditions that are suitable. Even a cursory review of soil information reveals that many of the alluvial valley soils in the PRB are poorly suited for irrigated agriculture, as many are classified as saline and saline-sodic and/or have poor drainage characteristics. A number of methods exist to promote artificial drainage, but they can be costly and difficult to maintain even in large projects with engineered systems.

Managed irrigation currently is, and should continue to be, an important water management alternative where feasible; however, other alternatives can meet the requirements of Section 20 and use of these alternatives is necessary to allow for comprehensive management of CBM discharge.

The current recommendations of Hendrickx and Buchanan appear to restrict CBM water management to a single option, which is neither feasible nor required by the Chapter 1, Section 20 narrative standard. Their assertion that the CBM water resources must be used with maximum efficiency, rather than opportunistically, is contrary to both the Chapter 1, Section 20 narrative standard and the historic irrigation practices in ephemeral drainages within the PRB, and relates solely to the use of water, rather than to water quality.

Necessity of Tier 2 Permitting Option. Agricultural water supply in the PRB is often natural runoff generated in response to storm events or snowmelt in ephemeral drainages. The quality of the natural runoff varies substantially depending on the flow in the drainage, with lower flows associated with poorer quality water (e.g. high salinity). As runoff gathers and water moves down stream courses, further dissolution of natural minerals into runoff continues and the agricultural water quality can vary at different points in a single drainage. These processes result in an exceptionally high degree of variability in the availability and quality of the agricultural

water supply. This variability is commonly observed between drainages and can also occur within a single drainage.

As discussed above, the problem with the Tier 1 approach is that, since existing water quality data from a drainage is not considered in the development process, it often results in effluent limit values for EC that are actually less than the background quality of the agricultural water supply, and less than the water quality that existing crops are demonstrably tolerating. Under these conditions, an alternative approach is clearly necessary, since even water flowing in the channel from a rainstorm in the absence of any discharge would not meet the proposed effluent limits. As such, because of the inconsistency between the Tier 1 approach and the background quality of the agricultural water supply in the PRB, WYPDES permit applicants have in many instances utilized Tier 2 and have submitted information to DEQ to support this approach in setting effluent limits in lieu of Tier 1 default limits. DEQ staff have testified that for the Tier 2 approaches selected, “80 percent of them or more have resulted in higher EC and SAR limits as a result of a Tier 2 study over a Tier 1 type study” due to the poor baseline water quality in the majority of drainages in the PRB. *See* Deposition of Jason Thomas, Oct. 18, 2007; *In the Matter of the Appeal and Review of the Issuance of WYPDES General Permits*; EQC Docket No. 06-3815 et al. at page 82, lines 22-24.

A proposed Section 20 rule must allow for adequate protection and enforcement, yet maintain the flexibility provided for in the narrative standard. From its inception, the Agricultural Use Protection Policy adopted by the DEQ, which formed the basis for the proposed rule prior to its withdrawal, included a three-tiered approach in an effort to accomplish this objective. At a general level, this approach included a default calculation of effluent limits for electrical conductivity (EC) based on the salt tolerance of specific crop species present in a drainage (Tier 1); development of effluent limits that would provide for discharge of water equal to, or of higher quality than, ambient (i.e. background) water quality in a drainage (Tier 2); and development of effluent limits for discharge of water of poorer quality than ambient water quality, provided a scientific demonstration is made that the degradation of such waters shall not be of such an extent to cause a measurable decrease in crop or livestock production (Tier 3).

Of the three options within this approach, it is clear that the Tier 2 and Tier 3 approaches, because they took into account specific conditions in particular drainages, were most aligned

with the Chapter 1, Section 20 narrative standard. They would have provided for determination of effluent limits through a logical process that includes consideration of the background quality of the agricultural water supply. In contrast, the “conservative” Tier 1 approach had no connection to the quality of the existing agricultural water quality and its narrow definition dismisses the known variability of background water quality in the Wyoming landscape. While the effluent limits developed using the Tier 1 process may be “protective” to crop or livestock production, the historic agricultural water supply itself (in the absence of any discharge) may be naturally of insufficient quality to meet the proposed effluent limits.

Potential Alternatives to Implementation of Section 20. In its September 23, 2009 notice of withdrawal of the proposed rule, the Department indicated that it will consult with a working group of experts to determine appropriate modifications to the proposed rule. The Council cannot and should not take further action on the withdrawn rule. Selection of an approach must await further proceedings and resolution of the numerous technical conflicts between the opinions of Hendrickx and Buchanan and other scientific and technical information that is already in the record, or will be added in the course of further proceedings. Looking ahead to further consideration of the proposed rule by DEQ, the initial Agricultural Use Protection Policy proposed by DEQ would continue to provide a workable framework for implementing Section 20. Other approaches may also be appropriate or, indeed, technically superior. For example, DEQ could refine the proposed rule by recasting Tiers 2 and 3 in the following structure:

- **Tier 1** – The Tier 1 option provides a means to develop effluent limits based on the salinity tolerance values of the most sensitive crop species in the drainage. However, as described above, this option may result in the development of effluent limits that are inconsistent with ambient water quality in a drainage, which would necessitate selection of the Tier 2 or Tier 3 option.
- **Tier 2** – The Tier 2 option could continue to be available as a means to develop effluent limits based on evaluation of available quality data for the actual agricultural water supply in the drainage. If sufficient data is available, the effluent limit for EC should continue to be based on the historic water quality data, with the general approach of setting the effluent limit at a point that would not result in degradation of (e.g. discharge

would be of equal or higher quality than) the agricultural water supply. Due to the variability of quality with flow, consideration should be given to adopting effluent limits that account for variable flow conditions (e.g. flow-based effluent limits). **In contrast to the current Tier 2 approach, evaluation of soil data would not be a primary element of this approach. Tier 2 would rely primarily on actual water quality data.** Under this approach to Tier 2, DEQ and the regulated community would not attempt to infer actual background water quality from data on the salinity of soils in the irrigated area, which Hendrickx and Buchanan criticize as scientifically invalid.

- **Tier 3** – A modified Tier 3 “no harm” option would provide a means to develop effluent limits based on determination of the existing soil salinity in irrigated agricultural areas. This Tier 3 approach would measure the salinity of irrigated soils that currently support crops and determine from that data the salinity of water that, if applied for irrigation, would not increase soil salinity and therefore would not harm the existing crops. The implementation process would closely follow the “conservative” Tier 1 approach; however, empirical soil salinity values from actual irrigated agricultural areas would be used in place of published plant salinity tolerance soil data. The implementation process would include (i) conducting a soil sampling program within the irrigated agricultural area(s), (ii) determining the average soil salinity value(s) within each irrigated agricultural area(s), and (iii) dividing the soil salinity value by a factor of 1.5 to obtain the corresponding irrigation water salinity value, which would be the resulting effluent limit for EC. Viewed superficially, this approach is the same as the methodology in the proposed rule for inferring background water quality from soil salinity (which Hendrickx and Buchanan criticize). However, its scientific foundation is fundamentally different. This “no harm” approach would not need to draw any inferences about historic background water quality in ephemeral streams, but would instead ascertain from that same data (where available) the salinity level of applied water that would not increase existing root-zone soil salinity with appropriate management and therefore could not adversely affect existing vegetation there.

Other elements can be utilized under the three-tiered approach to facilitate the implementation process, such as the following examples.

- **Landowner Irrigation Waiver** – A landowner can have the opportunity to develop an agreement with the discharge operator to allow for beneficial use of the discharge.
- **Flow-Based Effluent Limits** – The quality of the natural water supply often varies with flow, based on the intensity of storm events. Lowham Engineering has documented that, in the PRB, higher flow conditions are associated with higher quality water (e.g. lower salinity). Lowham also has documented that these high flow runoff events are infrequent and of relatively short duration. Landowners in the PRB historically have used these higher flow events to irrigate their lands. Conversely, lower flow conditions are associated with lower quality water (e.g. higher salinity). Landowners have historically by-passed these poorer quality natural flows. Therefore, effluent limits could be developed that would also vary based on flow, to be consistent with the natural relationship between flow and quality in Wyoming. Under such an approach, in-stream effluent limits would become more stringent as flows increase, to protect for higher quality waters that are typically observed and utilized by irrigators during high flow runoff events. Conversely, during low flows, when natural water quality is lower, effluent limits would also become less stringent. Flow-based effluent limits have been previously used successfully to protect agricultural water supply in the PRB.
- **In-Stream Monitoring** – The central difficulty in implementation of the Tier 2 approach in the Agricultural Use Protection Policy is that the lack of historic water quality data in certain geographic areas presents a challenge in developing effluent limits for those areas. The uncertainty that exists in areas with more limited data availability, and for which effluent limitations could be initially established under the modified methodologies presented above, can be mitigated through increased monitoring requirements in the discharge permits. Effluent limits would initially be based on available data with the understanding that uncertainty exists and an in-stream water quality (and potentially soil) monitoring program would be necessary to implement the discharge permit. The effluent limits in the permit would be subject to periodic review based on the results of the monitoring program, and may be modified based on the data collected.
- **Mixing Zone** – The NPDES program recognizes the complexity of developing effluent limits across many contexts, and allows elements such as a mixing zone to be a

component of a discharge permit if attenuation can be demonstrated. The DEQ has previously been reluctant to accept the use of mixing zones in determining whether end-of-pipe limits are needed for direct, non-impounded CBM discharges due to the fact that dilution may be limited in ephemeral drainages. However, as part of a refined approach, the mixing zone concept without end-of-pipe limits should still be a viable element for regulation of SAR, since attenuation of SAR values occurs even in the absence of dilution due to dissolution of naturally occurring minerals in the channel. Under this approach, the “mixing” that occurs is not of effluent with in-stream water, but rather chemical change in the effluent through “mixing” with minerals in the streambed from the point of discharge downstream to the point at which the water is first diverted or withdrawn for irrigation use, where compliance with the applicable SAR limit should be determined.

These are only a few examples of elements responsive to Drs. Hendrickx’ and Buchanan’s Reports that could be included within the current framework of an Agricultural Use Protection rule. We understand the desire to develop a streamlined and efficient approach to implementation of the Chapter 1, Section 20 narrative standard. However, a formulaic approach using only the Tier 1 option as suggested by Drs. Hendrickx and Buchanan in their May 2009 report would accomplish this at a cost of generating effluent limits that are inconsistent with the natural quality of the agricultural water supply. It would also come at a significant economic burden to CBM operators in the PRB, who have permitted and constructed many thousands of wells, and associated infrastructure, in reliance on the current Tier 2 procedure by which their permit limits on EC (and, indirectly, on SAR) have been established by DEQ. In their renewed and new permits, these operators would ostensibly have to meet Tier 1 limits that are more stringent than the natural water quality in the majority of the drainages in the PRB.

Ultimately, this formulaic approach would also be inconsistent with the intent of the Chapter 1, Section 20 narrative standard. It is critical that a final implementation rule provide for the flexibility to address the variability encountered across Wyoming, which is the crux of the narrative standard.

PATH FORWARD

The EQC cannot lawfully proceed with the rulemaking because there is no proposed rule for it to act on. Under the Environmental Quality Act, the Council only has authority to adopt a rule “after recommendation from the director of the department, the administrators of the various divisions and their respective advisory boards.” W.S. § 35-11-112(a)(1). In light of DEQ’s withdrawal of the proposed rule, no “recommendation” for the proposed rule, or indeed for any rule, exists as a predicate for the Council to proceed to adopt that proposal even in its original form. For the Council to proceed at all would clearly be unlawful and in excess of the Council’s statutory authority.

It would be even more egregious for the Council to persist in moving forward to adopt the former proposed rule with substantial modifications, such as deleting Tier 2. The proposed Ag Use rule reflected a comprehensive approach thoughtfully considered by the Water Quality Division Administrator, the DEQ Director, and the WWAB after a protracted and extensive rulemaking process. The tiered approach set forth in the proposed rule represented one careful and considered solution to the unique facts and circumstances related to CBM produced water discharges into the ephemeral drainages in the PRB and elsewhere throughout Wyoming. Significant modification to this comprehensive proposed rule, such as deleting that portion of Tier 2 under which background water quality may be determined from soil salinity data, could lawfully occur only after the WWAB and the DEQ had considered in further proceedings all of the factors bearing upon the reasonableness of the modified approach under the so-called balancing criteria set forth in the Environmental Quality Act.. See W.S. § 35-11-302(a)(vi). Those factors include the social and economic value of a pollution source, the priority of the location involved, the technical practicability and economic reasonableness of reducing or eliminating the source of pollution, and the effect upon the environment.

Our legislature mandated consideration of these balancing criteria to assure that agencies give thoughtful consideration to the real-world consequences that their new rules create. Even had DEQ not withdrawn the proposed rule, it would have been patently unreasonable and irresponsible for the EQC to go forward and eliminate a significant component of a flexible, comprehensive regulatory scheme, or modify a portion of that scheme (such as elimination of Tier 2), without providing a process for applying the balancing criteria that our legislature

mandated be part of the rulemaking process. Indeed, failure to provide such a process could be determinative of whether the EQC has considered all relevant information in its rulemaking decisions. *Tristate Generation & Transmission Ass'n. Inc. v. Env'tl. Quality Council*, 590 P.2d 1324, 1332 (Wyo. 1979).”

The Tier 2 provision has been central to the comprehensive rulemaking on the proposed Appendix H rule and involves complex technical issues with potentially wide-spread impacts. The EQC tasked its experts with looking at only a narrow sub-set of these issues and did not provide mechanisms for addressing the deficiencies they identified in Tier 2. Whatever approach is taken to address the Tier-2 related issues will have significant impacts upon the regulated community as well as upon other stakeholders. Given this complex set of facts, the impacts of eliminating or significantly modifying the proposed rule or any component of it can only be considered by the DEQ and WWAB as part of a well-conceived follow-on rule-making process. For all these reasons, it would be arbitrary and capricious and indefensible for the EQC to proceed in promulgation of a final rule, especially one that significantly departs from the proposed rule or fails to resolve patent scientific conflicts in the record. The Legislature gave EQC the responsibility of reviewing rules proposed by DEQ, not the power to originate rules. The EQC should suspend further proceedings until there is a proposed rule that it can lawfully consider pursuant to this limited authority.

Nor should the EQC move forward to adopt any form of final rule in light of the September 29, 2009, comments of US EPA Region 8 criticizing aspects of DEQ's now-withdrawn proposal. Region 8 has questioned some of the basic premises of DEQ's proposed implementation of Section 20, including provisions that have not been controversial. Thus, in addition to questioning the Tier 2 methodology, Region 8 expressed concern about the proposed rule's applicability only to discharges where DEQ determines during the permit proceedings that artificial and/or natural irrigation occurs on the receiving stream. Region 8 also expressed the view that the proposed rule should cover discharges to streams where irrigation use occurred after 1975, even if no irrigation can be identified today. Finally, Region 8 suggested that a central feature of the proposed rule – the availability of livestock and irrigation waivers to ensure that ranchers and farmers who wish to receive CBM produced water may continue to do so – allows unauthorized degradation of water quality.

For the reasons briefly discussed below, we believe Region 8's criticisms of the formerly proposed Appendix H are unfounded. More analysis and discussion of the legal issues raised by EPA will be necessary in coming months as DEQ proceeds with crafting a new version of a rule or, preferably, a policy to implement Section 20. But in view of EPA's threatened disapproval of a Section 20 implementation rule that includes key aspects of the formerly proposed Appendix H, it would not be a good use of the Council's or the public's resources to proceed with adoption of a rule at this time.

Region 8 questions whether the proposed Appendix H is contrary to EPA rules because (1) "presently occurring irrigation uses are not designated consistent with 40 C.F.R. 131.10(i) and (2) existing irrigation uses, in the federal definition of that term, are not protected consistent with 40 C.F.R. 131.12(a)(1)." Region 8 Comments at 4. Preliminary analysis suggests that EPA is ignoring other provisions of the Water Quality Rules and seeks to impose wholly unrealistic requirements on Wyoming.

EPA suggests that DEQ must identify, in a single rulemaking, all surface waters in the state that have presently occurring irrigation before any permits can be issued for protection of that irrigation use under Section 20. This would be extremely inefficient because only those waters that will receive certain discharges that contain elevated EC would potentially be impacted and need protection under Section 20. In practice, all or virtually all stream segments in the PRB have been evaluated for presently occurring irrigation – artificial or natural -- in the course of issuance or renewals of WYPDES permits for CBM discharges and are already receiving protection under DEQ's Section 20 implementation policy.

If CBM production occurs elsewhere on different drainages, watershed-based permitting will entail identification of currently existing irrigation throughout that watershed. Even in non-watershed based permitting, the first-issued WYPDES permit for CBM discharges to that watercourse will evaluate the presence of irrigation. This stream-specific approach is far more efficient than surveying all waters in the State to determine whether they have current irrigation structures or naturally irrigated bottomlands. The public will have ample opportunity to comment on these permit-driven "designations" and EPA will be able to review them in the context of its authority to comment on proposed WYPDES permitting actions.

We note also that Section 20, a part of Wyoming's EPA-approved water quality standards, says all surface waters to be maintained for "*continued*" use for agricultural purposes. It is axiomatic that only a currently existing irrigation use can be protected for continuing use. The accompanying criteria provision in Section 20 forbids degradation that causes a measurable decrease in crop production, which again requires some baseline of existing crop production that relies on existing irrigation. Appendix H would be a permissible methodology for translating this approved narrative water quality standard for protection of currently existing irrigated crop production into numerical effluent limitations in individual or watershed WYPDES permits.

Region 8 suggests that, for consistency with EPA's antidegradation rules, Section 20's use protections must extend to waters where there is no currently existing irrigation use, but there was such a use sometime after 1975. This criticism is also inconsistent with Section 20's clear requirement for protection of current levels of crop production, not protection of hypothetical production supported by irrigation that no longer occurs anywhere in the water body. In addition to being contrary to Section 20, with respect to supposed naturally irrigated bottomlands, Region 8's suggestion is probably academic, as it is unlikely that any water body in which such bottomlands do not currently exist would have had such bottomlands present in the past. Regarding artificial irrigation uses, it would be difficult if not impossible for DEQ to have reason to believe, let alone know for certain, that any given water body on which irrigation is not now occurring nevertheless at some time in the past 35 years had an artificial irrigation structure, especially as those now-vanished structures could well have been illicitly constructed and operated without permits from the State Engineer, leaving no paper trail. Indeed, under Wyoming law, any such structures would have required a valid water right in order to be recognized as a lawful irrigation use.

For all these reasons, we believe EPA's critique of the withdrawn Appendix H rulemaking is legally unfounded and presents major obstacles to a workable CBM permitting protocol in Wyoming and we anticipate further analysis and discussion of these issues as DEQ moves forward.