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Jim Ruby, Executive Secretary
Environmental Quality Council

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August 26, 2008

David Waterstreet
Department of Environmental Quality/Water Quality Division
Herschler Building 4-W
122 West 25th Street
Cheyenne, Wyoming 82002

RE: Proposed Revisions to Appendix H, Chapter 1, Wyoming Water Quality Rules and Regulations: Agricultural Use Protection

Dear Mr Waterstreet:

Pennaco Energy, Inc. ("Pennaco"), on behalf of itself and its parent, Marathon Oil Company ("Marathon"), submits the following comments on the proposed Agricultural Use Protection Rule ("AUP Rule"). Pennaco requests that the Water Quality Division consider these comments and ensure that they are included in the record to be presented to the Environmental Quality Council.

Pennaco incorporates by this reference the comments we submitted to you on June 14, 2007. We will not burden the record by setting them forth again in detail Briefly, in those comments Pennaco first explained why the most persuasive scientific information then in the record – two reports by Kevin Harvey – strongly militated for a Tier I default limit on EC of not less than 2700 uS/cm (not 1300 uS/cm) and a cap on the corresponding SAR limit of 16 (not 10). Pennaco is not aware of any new scientific information placed in the rulemaking record in the intervening

months that would contradict Mr Harvey's conclusions concerning the levels at which EC and SAR may adversely affect plants and soils.[1]

DEQ responded to the SAR cap issue in its summary of comments from the June 15, 2007 WWAB hearing, stating that it disagreed with Mr Harvey's recommended cap of 16, based on what DEQ called "differing opinions and interpretations of the scientific literature among agricultural experts" (whom DEQ did not identify) *See* Comment 26 at 16-17. But DEQ did not mention Mr. Harvey's recommendation that the default EC limit to protect alfalfa should be set at 2200 uS/cm based on research on salt tolerance of plants in the Northern Great Plains and on historical alfalfa yield data in Wyoming, rather than on USDA data from California.

In its summary of comments from the September 14, 2007, WWAB meeting, DEQ focused almost entirely on the livestock protection standards and did not discuss the question of Tier I limits on EC or SAR. In its summary of comments on the March 28, 2008 WWAB meeting, DEQ again addressed claims that the SAR cap should be lower, stating "we believe that the cap of 10 is adequately protective and also supported by the scientific literature." Comment 14 at 12. Thus, DEQ has not provided a substantive response to Mr. Harvey's recommendation that protective levels of EC in irrigation water be set using Wyoming, not California, data.

Second, in its June 14, 2007 comments, Pennaco explained why putting end-of-pipe EC or SAR limits on water discharged into on-channel impoundments that may later discharge under

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[1] Following its hearing on the previous version of the proposed AUP Rule in February 2007, the Waste and Water Advisory Board agreed with Mr Harvey's recommended default EC limit and SAR cap of 16. While the Advisory Board held several hearings on the current AUP Rule (on June 15, September 14, and December 7, 2007, and on March 28, 2008), it has not rescinded its earlier recommendation or reached a different conclusion On the contrary, DEQ simply disregarded the Board's recommendation As Chairman Sugano noted during the June 15, 2007 WWAB meeting in response to Marathon's testimony in support of Mr. Harvey's conclusions: "Just as a point of clarification, the DEQ has not submitted new information on the EC or SAR. They have just gone back to the USDA information that was submitted early on and they more or less overruled the Board on the higher limits " Transcript of June 17, 2008 meeting, page 48, lines 12-16. See http://deq.state.wy us/wqd/WQD_home/Advisory%20Board%20-%20Misc/index.asp

"wet" conditions, i.e., due to precipitation, is not a reasonable approach to protect irrigated crops at downstream locations. Our comments explained that this blanket requirement for end-of-pipe limits on discharges to impoundments was the result of inadequate consideration of the factors prescribed in Wyo. Stat § 35-11-302(a)(vi), specifically the effects of a particular discharge vs. the economic costs of regulating it

Nothing has changed since Pennaco submitted those comments. While precipitation-driven overflows from on-channel impoundments may reach irrigated lands in a given drainage, discharges into such impoundments can themselves have no adverse effect on irrigation, whereas the treatment required to achieve irrigation-protective effluent limits – Tier I, II or III – in impounded water will impose a major cost burden and reduce the benefits conferred by CBM production on Wyoming and its citizens. To the extent the AUP Rule imposes end-of-pipe limits for the administrative convenience of the Department, the Rule does not balance the minimal benefits of the rule against the costs of meeting irrigation-protective limits on all of the water discharged into impoundments, rather than adjusting end-of-pipe limits in response to actual impacts, if any, at the downstream location where irrigation occurs

In addition to these two prior points, Pennaco urges the Department to add provisions to the proposed rule to exempt produced water discharges that are subject to the rule[2] from the livestock protection limits on TDS, sulfates and chloride where either (1) background water quality does not meet these limits, in which case, effluent limits would be set to protect the background water quality, or (2) a landowner or livestock producer requests the discharge and accepts the potential risk to his livestock These changes should mirror the exemptions from the irrigation-

[2] Marathon strongly supports DEQ's decision to exempt discharges that commenced before January 1, 1998, from the revised Appendix H. Marathon believes that the justification for exempting these "historic discharges" set forth in the Draft Statement of Principal Reasons amply supports the distinction between these discharges and more recent CBM discharges, and that this distinction would be upheld by a reviewing court.

protection standards for discharges where background water quality is shown not to meet the Tier I default limits or where an "irrigation waiver" is requested by the affected landowners Nothing in the record supports not providing the same exemptions from the livestock-protection standard as those that would be available from the irrigation-protection standard.

Pennaco has previously joined in comments critical of the inclusion of supposed "naturally irrigated lands" ("NILs") within the scope of the AUP policy's irrigation protection provisions We reiterate those objections with respect to the proposed AUP Rule. The purpose of the Rule is to translate the requirement in Section 20 that a discharge should not be permitted to degrade water quality "to such an extent to cause a measurable decrease in crop or livestock production." The term "crop production" clearly implies active management of land, including irrigation, in order to "produce" one or more "crops."

The AUP Rule would find NILs wherever lands along stream channels have "enhanced vegetative production due to periodic natural flooding or sub-irrigation," i e., "enhanced productivity of plants used for agricultural purposes." Elsewhere, the AUP Rule says that, to trigger the irrigation-protection standard for NILs, "there needs to be . . substantial acreage of sub-irrigated pasture within a stream floodplain" App. H, section (a); page H-1 at lines 18-19 But the definition of NILs appears to require only that that some plants that are edible by livestock grow in these areas; the definition contains no requirement that a landowner "produce" any "crop" from this land, or even graze any cattle on it. Clearly, a discharge of water that might degrade existing water quality and thereby reduce the amount of grass growing in a bottom land that no one utilizes, or produces any crop from, or puts livestock on, does not cause a decrease in "crop production." Thus, if NILs remain in the Rule, the definition of these areas needs to require some degree of actual use of the enhanced vegetation. Unless some "crop production" occurs on flooded bottomlands, there could be no pre-existing agricultural use or any impact on that use

Finally, Marathon urges the Department to reject the comments of the Wyoming Outdoor Council ("WOC"), filed August 4, 2008. WOC contends that the AUP Rule should reflect what WOC characterizes as a "ruling" on June 24, 2008 by the EQC in the cross-appeals of the Pumpkin Creek and Willow Creek Watershed General Permits. In fact, the Council issued its Findings of Fact, Conclusions of Law and Order in these appeals ("EQC Decision") on August 12, 2008.

In several important respects, WOC's comments do not comport with the EQC Decision. WOC says the Council "eliminated . . the limits set by DEQ for all non-irrigated lands of 7500 for EC and no limit whatsoever for SAR." Nothing in the EQC Decision suggests that, in the absence of artificially or naturally irrigated lands, as defined in the AUP Rule, irrigation protection limits would apply in a discharge permit. In those situations, under section (a) of the AUP Rule "for livestock watering purposes, a pre-existing use will always be assumed," and the relevant limits are specified in section (b) of the rule. Those limits do not include a limit on EC or SAR. The EQC Decision in the Pumpkin/Willow Creek appeals does not suggest any different result.

WOC contends further that the EQC Decision eliminated the standard in the AUP Rule which requires that, to qualify as an NIL, a bottom land parcel must comprise at least 20 acres, and be in a floodplain at least 50 feet wide. Again, nothing in the EQC Decision suggests this is the Council's view. Neither the Willow Creek General Permit nor the Pumpkin Creek General Permit included limits on EC or SAR to protect naturally irrigated bottomlands. EQC Decision, Finding 41 at 5. The limits in both permits were premised on artificial irrigation. Thus, the Willow Creek permit set default limits of 1330 uS/cm to protect alfalfa being artificially irrigated in that drainage, and the Pumpkin Creek set default limits of 2200 uS/cm and 13 for western wheatgrass being artificially irrigated in that drainage. EQC Decision, Findings 27, 28 at 3-4. EQC rejected WOC's contention that, because the soil and climate in Pumpkin Creek could support alfalfa growth,

discharges into that drainage, like those into Willow Creek, should meet the default limits for irrigation of alfalfa. *See* WOC Proposed Findings of Fact (June 16, 2008), Findings 34-37.

The Council found that naturally irrigated bottomlands of varying sizes in both drainages would, in fact, be protected by these limits, but did not make any findings that any of these bottomlands are less than 20 acres, or decide whether these bottomlands in either drainage would qualify for protection under the AUP Rule if there had been no artificial irrigation in that drainage. *See* EQC Decision, Finding 42 at 5. The Council modified the Pumpkin Creek permit by capping SAR at 10, rather than the 13 that corresponds to EC of 2200 under the Hanson Chart. EQC Decision at 10. But nothing in the EQC's decision indicates that it believed the irrigation protection standards would, or should, have applied in the absence of both artificially irrigated lands and NILs comprising at least 20 acres.

Nor would it be appropriate for DEQ or the Council to eliminate this threshold size requirement without a careful balancing under Wyo Stat § 35-11-302(a)(vi) of what DEQ deems the adverse effects of discharges that exceed the irrigation protection standard for NILs against the costs, to DEQ and to the regulated community, of protecting every asserted bottomland that may receive stream flows containing produced water, no matter how small. And, simply in order to administer the AUP Rule, DEQ properly has adopted a reasonable de minimis cut-off, below which the irrigation protections will not apply to NILs DEQ and the Council should reject WOC's contention that the 20-acre threshold for NILs has been, or should be, eliminated.

Respectfully submitted,

David T. Hill, P.E.
Environmental Supervisor