

AUG 21 2006

**Terri A. Lorenzon, Director
Environmental Quality Council**

4W Ranch, 1162 Lynch Rd.
Newcastle, WY 82701

18 August 2006

Re: Pre-hearing memo; Docket No. 04-3801

Jon Brady, Vice-Chair
Environmental Quality Council
Herschler Building, Room 1714
122 West 25th Street
Cheyenne, WY 82002

Dear Vice Chairman Brady,

In accordance with the Amended Notice of Hearing and Order, Item No. 5, the 4W Ranch submits the following information.

1. List of Witnesses:

The 4W Ranch has two witnesses, they are:

Major Robert L. Harshbarger and Jean Sherwin Harshbarger, Owners and Operators of the 4W Ranch. Their address is 1162 Lynch Rd., Newcastle, WY 82701 and the telephone number is 307 746 2815. Also, we would like to request permission, if appropriate, to have our son Robert M. Harshbarger sit with us at the hearing for the purpose of taking notes and consulting with Jean and I. Robert is owner of Talon Environmental, Ellsworth, KS.

The 4W Ranch reserves the right to call any of the other parties' witnesses or any other witness that it feels appropriate for rebuttal.

2. The substance of our proposed testimony:

Our intention as property owners and citizens of the State of Wyoming is to appear before the Environmental Quality Council, which is composed of 7 citizens of the State of Wyoming, to present and discuss with them our concerns for their consideration regarding the discharging of CBM Waste Waters into the drainage's of the Cheyenne River Basin (Watershed).

East of the Rochelle Hills in Weston County, Wyoming, nestled in the valley floor of the Cheyenne River lies the historic 4W Ranch, one of the original three ranches on the Cheyenne River. The 4W Ranch has been in existence for over 126 years and has been the property of the Sherwin Family since 1924 (82 years). This ranch is our home and our livelihood, as well as the home for our livestock, numerous species of big game animals, other small mammals, upland game birds, song birds and neotropical migrants.

The Cheyenne River Wetland and Riparian Habitat on the 4W Ranch is a wildlife oasis. It includes an outstanding overhead story of woody vegetation that includes native

cottonwood, green ash and willow, and an under story of vegetation that includes native grasses, forbs, and shrubs. This unique riparian habitat provides for an abundant amount of wildlife species that includes golden eagles, mule deer, white-tail deer, turkeys, sage grouse, sharp-tail grouse, numerous other non-game species, and it is an important winter habitat for bald eagles. This area is a haven for these wildlife species and is a natural resource treasure for the 4W Ranch while providing valuable forage production for our livestock. Few ranches in the state have a wetland and riparian area of this magnitude as part of their private property. The potential risk for the degradation or destruction of this valuable asset is very real and would dramatically decrease the overall monetary value of the 4W Ranch. No CBM Discharge permits should be allowed until the Bill Barrett Corporation, Merit Energy, or any other company for that matter, can prove without a reasonable doubt that no harm will ever come to this valuable wetland and riparian ecosystem by discharging CBM Waste Waters into the drainage's of the Cheyenne River Basin upstream of the 4W Ranch.

We are distressed by the uncertainty of the ecological damages that will occur with the granting of permits to Bill Barrett Corporation and Merit Energy Co. and the many other permits that have been granted to discharge CBM Waste Waters into the Cheyenne River Basin. Most fundamentally we are concerned about our health, our livelihoods, our ability to continue an economically viable ranching operation as we know it today. The Cheyenne River Ecosystem as it is today is a vital ingredient to our agricultural operations. This ranch was established in 1879 and over these past 126 years we have learned what the river can do for us and what it cannot do for us.

By introducing CBM waters into the Cheyenne River Basin we know for a fact that it will change the chemistry of the water and the soils along the river. Do we know whether these chemical changes will be beneficial or harmful? No one, the DEQ or the engineers of Barrett or Merit have the infinite knowledge to know for certain what the results of these chemical changes will do to our lands along the Cheyenne River. We, whose health and livelihoods are dependent upon the Cheyenne River as we know it today are not willing to gamble away our future by allowing our present ecosystem to be altered by the introduction of unknown and foreign elements into the system. The present high quality of this unique ecosystem of the Cheyenne River Basin will be changed forever, our quality of life will change forever. We are not willing to sacrifice our livelihoods or the destruction of our property to an unknown situation.

Salinity Hazards, Sodium Hazards, pH Hazards and many toxic substances that are characteristic of CBM Waste Waters pose a real and significant threat to the 4W Ranch either as surface water in the stream watercourse or as ground water in the alluvium of the river channel as these waters are being discharged upstream into the Cheyenne River Basin and Watershed.

3. List of Exhibits:

Exhibit 1. CBM Water and Soils: Larry Munn, Professor, University of Wyoming

Exhibit 2. Understanding Irrigation Water Quality: Agronomy News March 2000
Colorado State University

Exhibit 3. Water Quality for Agriculture: R.S. Ayers, Soil and Water Specialist,

University of California, Davis

- Exhibit 4. Irrigation Water Quality Criteria: T. A. Bauder, G. E. Cardon, -----
Colorado State University Cooperative Extension
- Exhibit 5. 4W Ranch Soils Report; Bill Taylor, University of Wyoming
Cooperative Extension Service
- Exhibit 6. Salinity, Sodicity and Flooding Tolerance of Selected Plant Species of the
Northern Cheyenne Reservation: Dr J. W. Bauder, MSU Bozeman
- Exhibit 7. The Effects of Irrigation Water Quality, Temperature and Length of Flooding
on Alfalfa Production: J. W. Bauder, Montana State University, Bozeman
- Exhibit 8. Acceptable Irrigation Water Quality: Jim Bauder, MSU Bozeman
- Exhibit 9. HortNote No. 5: Joe Scianna, NRCS-USDA, Bridger, MT
- Exhibit 10. The Basics of Salinity and Sodicity Effects on Soil Physical Properties:
J. W. Bauder, MSU Bozeman
- Exhibit 11. Water Quality Criteria for Irrigation: Glenn J. Hoffman, Biological Systems
Engineering, University of Nebraska Cooperative Extension
- Exhibit 12. Chemical Changes in Coal Bed Methane Product Water Over Time:
J. W. Bauder, MSU Bozeman
- Exhibit 13. Soil Behavior Upon Wetting with Saline-Sodic Water: Part 1 - Background
J. W. Bauder, Professor of Soil and Water Quality, MSU Bozeman
- Exhibit 14. Soil Behavior Upon Wetting with Saline-Sodic Water: Part 2-Chemical
Responses. J. W. Bauder, MSU Bozeman
- Exhibit 15. Water Quality Analysis of the Effects of CBM Produced Water on Soils,
Crop Yields and Aquatic Life: Abe Horpestad, Montana DEQ
- Exhibit 16. Diagnosing Salinity Problems: Reagan Waskom, Colorado State Univ.
- Exhibit 17. Pictorial of Irrigation Dam & Water Rights 4W Ranch; R. L. Harshbarger
- Exhibit 18. Certificate of Appropriation of Water , State of Wyoming
- Exhibit 19. Letter to Augustus Sherwin from Wyoming State Engineer's Office
- Exhibit 20: Comment Letter, dated 6 March 2006 to John Wagner, DEQ/WQD from
Major Robert L. Harshbarger; Subj: Bill Barrett Corp.; Permits
WY0051217, WY0051233, Merit Energy Company; Permit
WY0051373.
- Exhibit 21: A Pictorial of Wetlands and Riparian Zones Along The CheyenneRiver On
The 4W Ranch; R.L.. Harshbarger.

- Exhibit 22: Riparian Data, Plant Profiles Folder. (Contains a listing of a few plants that are found in the Wetlands and the Riparian Areas of the 4W Ranch.)
- Exhibit 23: Comments of J. David Allan, Ph.D. on BLM Draft EIS with 4W Ranch introductory letter.
- Exhibit 24: Wyoming Office of Attorney General Formal Opinion 2006-001 Water Quantity / Water Quality
- Exhibit 25: Fact Sheet #3: Function of Riparian Areas for Wildlife Habitat. This paper is a short narration of the importance of Riparian Areas.
- Exhibit 26: IV-4b. The Riparian Zone. Wyoming Stream Team. A short and brief description of Riparian Areas and the importance of their existence to individual ecosystems.
- Exhibit 27: Riparian Areas Environmental Uniqueness, Functions, and Values. RCA Issue Brief #11, Aug. 1996. USDA, NRCS
A short paper illustrating the various functions of Riparian Areas.
- Map Exhibit 1: Portion of USFS TBNG map high lighting Porcupine Creek, Antelope Creek and Cheyenne River.
- Map Exhibit 2: US Forest Service 4W Ranch Map.
- Map Exhibit 3: Portion of 4W Ranch Topo Map outlining Cheyenne River.
- Map Exhibit 4: US Forest Service Map Thunder Basin National Grasslands.
- Exhibit 30: Excerpts from Niobrara Conservation District: CHEYENNE RIVER WATERSHED NIOBRARA COUNTY 319 IMPLEMENTATION PROJECT Topical Report RSI-1818, February 2006, PDF Format.
- Exhibit 31: Alluvial Technical Notes - 5/18/02. Obtained from Carol Nicholls, Weston Conservation District.
- Exhibit 32: NRCS Document: Cheyenne River Geology and Soil Analysis.
- Exhibit 33 Phillips Petroleum Company NPDES Permit Application For Discharge To Antelope Creek.
- Exhibit 34 Coal Bed Methane - Frequently Asked Questions.

The 4W Ranch may request to enter additional exhibits that may be necessary for purposes of visual illustration or rebuttal.

4. Summation of the facts and legal issues:

The 4W Ranch will present and discuss:

1. That the effluent limits are not protective of the wetland and riparian areas on the 4W Ranch. That most if not all of the riparian vegetation is sub-irrigated from water (ground water) in the alluvium and that most of these plants are not tolerant of the increased salinity that will occur with the introduction of CBM Waste Water into the alluvium upstream of the 4W Ranch. That over time CBM Waste Water will work its way through the Cheyenne River Channel alluvium as ground water and eventually reach the 4W Ranch.
2. That the permit established effluent limits for the end of pipe, which are to be protective of all the designated uses defined in Chapter 1 of Wyoming Water Quality Rules and Regulations are not protective for agriculture.
3. That the Salinity Hazard of an Electrical Conductance (EC) of 2000 micromhos/cm for CBM Waste Water for use as irrigation water is too high for alfalfa production. That the limiting EC should be 1200 or 1300 micromhos/cm
4. That over time the Sodium Hazard (SAR) of 10 for irrigation water will be detrimental to the soils of our hay meadows, thus affecting our ability to produce quality alfalfa for our livestock.
5. "Section 20. **Agricultural Water Supply.** All Wyoming surface waters which have the natural water quality potential for use as an agricultural water supply shall be maintained at a quality which allows continued use of such waters for agricultural purposes.

Degradation of such waters shall not be of such an extent to cause a measurable decrease in crop or livestock production.

6. Section 8. **Antidegradation.**

(a) Water uses in existence on or after November 28, 1975 and the level of water quality necessary to protect those uses shall be maintained and protected. Those surface waters not designated as Class 1, but whose quality is better than the standards contained in these regulations, shall be maintained at that higher quality. However, after full intergovernmental coordination and public participation, the Wyoming Department of Environmental Quality may issue a permit for or allow any project or development which would constitute a new source of pollution, or an increased source of pollution, to these waters as long as the following conditions are met:

- (i) The quality is not lowered below these standards;
 - (ii) All existing water uses are fully maintained and protected;
 - (iii) The highest statutory and regulatory requirements for all new and existing point sources and all cost effective and reasonable best management practices for non point sources have been achieved; and
 - (iv) The lowered water quality is necessary to accommodate important economic or social development in the area in which the waters are located.
- (b) The administrator may require an applicant to submit additional information, including

but not limited to an analysis of alternatives to any proposed discharge and relevant economic information before making a determination under this section.

(c) The procedures used to implement this section are described in the "Antidegradation Implementation Policy."

7. Section 8 (a) (ii) is very specific in its wording; "**All existing water uses are fully maintained and protected;**" This is a very concise and a strong statement when used in conjunction with the first sentence of Section 8 (a) "**to protect those uses shall be maintained and protected.**"

8. Section 12. **Protection of Wetlands.** Point or non point sources of pollution shall not cause the destruction, damage, or impairment of naturally occurring wetlands except when mitigated through an authorized wetlands mitigation process. When approving mitigation, the department may consider both the ecological functions and the wetland value of the disturbed wetland.

(iv) "Ecological function" means the ability of an area to support vegetation and fish and wildlife populations, recharge aquifers, stabilize base flows, attenuate flooding, trap sediment and remove or transform nutrients and other pollutants;

(vii) "Natural wetlands" means those wetlands that occur independently of human manipulation of the landscape;

(x) "Pollution" means contamination or other alteration of the physical, chemical or biological properties of any waters of the state, including change in temperature, taste, color, turbidity or odor of the waters or any discharge of any acid or toxic material, chemical or chemical compound, whether it be liquid, gaseous, solid, radioactive or other substance, including wastes, into any waters of the state which creates a nuisance, or renders any waters harmful, detrimental or injurious to public health, safety or welfare, to domestic, commercial, industrial, agricultural, recreational or other legitimate beneficial uses, or to livestock, wildlife or aquatic life, or which degrades the water for its intended use, or adversely affects the environment.

(xiv) "Wetland value" means those socially significant attributes of wetlands such as uniqueness, heritage, recreation, aesthetics and a variety of economic values.

9. In the opening remarks of our letter of appeal dated 2 June 2004 to the Chairman of the EQC we stated:

"Dear Mr. Chairman,

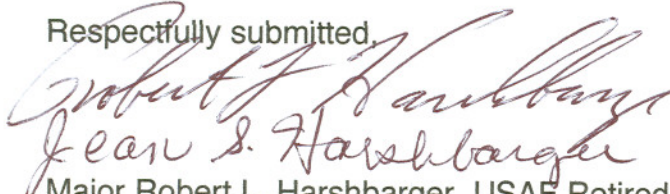
As an affected land owner and a protestant of NPDES Permits WY0051217, WY0051233 and WY0051373 we are appealing the issuance of these permits and desire a hearing before the Environmental Quality Council to present our concerns.

The following are a few reasons that the 4W Ranch is filing this appeal."

In our first comment letter to John Wagner WQD/DEQ (Exhibit 20) we commented on a number of concerns including Riparian Habitat, Geohydrology, Soil Quality, Toxic

Elements and Product Water Disposal (reinjection). It is possible that these may come up for discussion during the hearing.

Respectfully submitted,

Handwritten signature of Robert L. Harshbarger in cursive script.

Major Robert L. Harshbarger, USAF Retired
Jean S. Harshbarger
Owners and Operators 4W Ranch

cc: John Sundahl
Sundahl, Powers, Kapp & Martin
1725 Carey Avenue
P.O. Box 328
Cheyenne, WY 82003-0328

Hadassah Reimer
Jack D. Palma
Holland & Hart, LLP
2515 Warren Ave., Suite 450
Cheyenne, WY 82001

Mike Barrish
Sr. Assistant Attorney General
123 Capital Building
Cheyenne, WY 82002

Attachments: Major Robert and Jean Harshbarger biographies

Major Robert L. Harshbarger
United States Air Force, Retired

20 year veteran of United States Air Force

Enlisted in the Air Force in October 1950 at the start of the Korean Conflict

Trained as a Gunsight /Radar mechanic and worked on F-84 Fighters in England

Applied for and entered Aviation Cadets in August 1952

Graduated with Honors and was commissioned and a 2nd Lieutenant in February 1953 with an aeronautical rating of Radar Observer/All Weather Fighters and flew as a combat crew member in F-94C Starfighters

Applied for and entered USAF Pilot Training in June 1956

Graduated in the top 10 of his class in July 1957 and received his coveted Pilot Wings

Has flown F-86 Saber's, B-57 Canberra's, RB- 66 Destroyer's and RF- 4C Phantoms

Flew 100 Combat Missions in Vietnam as a RF- 4C Aircraft Commander. The majority of these missions were low level, high speed night photo reconnaissance flights

During his combat tour in Vietnam he was awarded the Distinguished Flying Cross for Heroism and 8 Air Medals. The Distinguished Flying Cross Citation reads;

"Major Robert L. Harshbarger distinguished himself by heroism while participating in aerial flight as an RF-4C Aircraft Commander near Dong Hoi, North Vietnam on 2 November 1966. On that date, Major Harshbarger, while engaged in routine reconnaissance operations added a vital target of opportunity, a hostile force surface-to-air missile complex, to his tasked mission requirements. With complete disregard for his own personal safety, Major Harshbarger obtained vital imagery of the complex which was subsequently destroyed. The outstanding heroism and selfless devotion to duty displayed by Major Harshbarger reflect great credit upon himself and the United States Air Force."

Retired from the United States Air Force, 1 November 1970 with over 5,000 flying hours

Was awarded the Meritorious Service Medal upon his retirement. Part of the Meritorious Service Medal Citation reads;

" The singularly distinctive accomplishments of Major Harshbarger culminate a long and distinguished career in the service of his country and reflect great credit upon himself and the United States Air Force."

Jean Sherwin Harshbarger

Jean grew up on the 4W Ranch and has been associated with the daily operation of the ranch since the death of her father in 1964.

Jean attended University High School and College in Laramie.

Jean graduated from the University of Wyoming with a Degree in Range Management.

She was the first woman to earn this Degree from the University of Wyoming. She graduated in 1956.

Jean has been active in Wyoming Farm Bureau most of her adult life.

She has served as Weston County Farm Bureau President and other board positions.

Jean is presently Chairperson of the Wyoming Farm Bureau Federation's Natural Environmental Resource (NER) Committee.

Jean was a Board Member of the Thunder Basin Grazing Association for over 20 years.

Jean also holds memberships in The Wyoming Stockgrowers Association and The Wyoming Wool Growers Association.

Jean's life long knowledge of ranching, Wyoming agriculture, and the 4W Ranch ecosystem is exceptional.