

**BEFORE THE  
ENVIRONMENTAL QUALITY COUNCIL  
STATE OF WYOMING**

**FILED**

MAR 05 2007

Terri A. Lorenzon, Director  
Environmental Quality Council

IN THE MATTER OF THE APPEAL OF )  
4W RANCH OBJECTION TO )  
NPDES PERMITS WY0051217, )  
WY0051233 & WY0051373 )

DOCKET NO. 04-3801

**FINDINGS OF FACT AND CONCLUSIONS OF LAW FOR PERMIT NO. WY0051217  
(PALM TREE UNIT) AND ORDER TO REMAND**

THIS MATTER came before the Environmental Quality Council (EQC) on September 26-27, 2006, in Douglas, Wyoming. The EQC members present at the hearing were Jon Brady presiding as Hearing Examiner, John Morris, Dennis Boal, Richard C. Moore P.E., and Sara Flitner. Terri A. Lorenzon, attorney for the EQC and Bridget Hill, Assistant Attorney General, were present to advise the EQC. At the hearing Bill Barratt Corporation (Barrett) was represented by Hadassah M. Reimer, the Department of Environmental Quality (DEQ) was represented by Michael Barrash, and the petitioners, 4W Ranch, Major Harshbarger and Mrs. Jean Harshbarger represented themselves.

On November 3, 2006, in response to the EQC's September 2006, decision, Barrett filed a motion to remand Permit No. WY0051217 (Palm Tree Unit) to the DEQ in order to interpret and apply the EQC's decision. At public meeting the EQC held a motion hearing on January 17, 2007. Barrett was represented by Hadassah M. Reimer, and the DEQ was represented by Michael Barrash. The petitioners, 4W Ranch, Major Harshbarger and Mrs. Jean Harshbarger were not present or represented at the hearing. The EQC members present at the hearing were Jon Brady, presiding as Hearing Examiner, John Morris, Dennis M. Boal, Richard C. Moore P.E., and Sara Flitner. The EQC having considered the evidence presented and being otherwise well advised in the premises the Council finds as follows:

**FINDINGS OF FACT**

1. Initially this matter was the appeal of three WYPDES permits. Permit No. WY0051217 (Palm Tree Unit) and WY0051233 (the Big Porcupine Project), are issued to Barrett and Permit No. WY0051373, is issued to Merit Energy Company.
2. The Petitioners withdrew their appeal to WYPDES Permit No. WY0051373 and it was dismissed by the Order dated September 26, 2006.

3. The EQC issued separate decisions for the Palm Tree and the Big Porcupine Project permits. The Big Porcupine Project permit no. WY0051233 has been decided in another order dated February 28, 2007.
4. Permit No. WY0051217, also known as the Palm Tree Unit Permit, authorizes Bill Barrett Corporation to discharge coal bed methane produced water into tributaries of the Cheyenne River as long as the quality of the discharge water does not exceed, among other things, the following permit limits:
  - (a) Specific Conductance (EC) - 2000 micromhos/cm
  - (b) Sodium Absorption Ratio (SAR) - 10
  - (c) pH - 6.5 to 8.5 standard units
  - (d) Barium - 1800 µg/l
  - (e) Dissolved Iron - 1000 µg/l
  - (f) Arsenic - 2.4 µg/l
5. The discharge water being discharged under this permit is being used for irrigation.
6. The Petitioners are the owners and operators of the 4W ranch located downstream of the discharges under the Palm Tree Unit Permit.
7. The Petitioners' source of irrigation is the Cheyenne River.
8. The permit does not require containment or reduce the natural flow of the Cheyenne River.
9. At its peak, discharge under the Palm Tree Project Permit was at 750,000 gallons per day across the entire project. In June of 2006, the Palm Tree Project was discharging about 170,000 gallons per day, or 100 gallons per minute across the entire project.
10. Although at this point it appears that there is not enough quantity of discharged water to reach the Cheyenne River, there is no assurance provided in the permit that the discharged water will not reach the Cheyenne River.
11. The permit limits for pH are set at the range that is appropriate for aquatic life.
12. The permit limits for Barium are set at an amount appropriate for human health.
13. The permit limits for Dissolved Iron are set at an amount appropriate for aquatic life.
14. The permit limits for arsenic are set at an amount appropriate for human health.
15. There is no numeric standard for SAR and EC in the DEQ Water Quality rules.

16. The EC level in the permit is set using Salt Tolerance Database from the George Brown Salinity Laboratory in California and based on the threshold valuation of alfalfa, the most salt-sensitive plant irrigated in northeastern Wyoming.
17. The SAR level in the permit is set using the EC limit determined from the irrigation suitability categories and the Hanson Graph.
18. There is an interdependent relationship between SAR & EC. The relationship can be expressed by the equation  $SAR < 7.10 \times EC - 2.48$ . This equation represents the line on the Hanson Graph between no reduction in infiltration and slight to moderate reduction in infiltration.
19. If the EC and the SAR fall above the line on the Hanson Graph there is potential to cause adverse effects to the soil. Specifically, if the effluent limits for EC and SAR are set independently and the effluent limits are met there is the potential for the water applied to the soil to cause a slight to moderate reduction in infiltration.
20. The permit does not recognize the relationship between SAR and EC.
21. DEQ relies on the USGS monitors and contracts for additional monitors for data collection that will enable it to spot cumulative increases in SAR and EC in watercourses over time.
22. There is a re-opener provision in the permit allowing modification if there is a measurable decrease in downstream crop or livestock production.
23. There is no evidence that the permit limits related to pH, Barium, Dissolved Iron, and Arsenic will cause a measurable decrease in crop and livestock production in violation of Wyoming Water Quality Rules & Regulations (WQ Rules) Chapter 1, § 20.
24. There is no evidence that the discharges of CBM water under this permit will violate WQ Rules, Chapter 1, § 8(a)(ii) which require that a new source of pollution must ensure that all existing water uses are fully maintained and protected.
25. There is no evidence that the discharges of CBM water under this permit will violate WQ Rules related to aesthetic degradation.
26. There is no evidence that the discharges of CBM water under this permit will deny the Petitioners their historic irrigation water rights and damage their personal property.
27. Although the Petitioner stated that there is no measurable decrease in the 4W Ranch crop or livestock production at this time, the additional salt loading and



increases in SAR levels in the drainage would eventually cause a decrease of crop or livestock production at the ranch.

28. WQ Rules Chapter 1, § 20 state as follows:

“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 water for agricultural purposes.

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

The DEQ has created the Agriculture Use Protection Policy to implement these rules.

29. The DEQ has the technical knowledge and experience to incorporate the equation in to the permit.

#### **CONCLUSIONS OF LAW**

1. The EQC has jurisdiction over the subject matter and the parties to this proceeding.
2. The Environmental Quality Act, Wyo. Stat. § 35-11-112(b)(iv) grants the EQC authority to conduct hearings in cases contesting permits, and Wyo. Stat. § 35-11-112(c)(ii) provides authority to modify permits. The EQC conducts de novo hearings pursuant to the DEQ Rules of Practice and Procedure, the Wyoming Rules of Evidence, and the Wyoming Rules of Civil Procedure.
3. The EQC is not bound to accept testimony from the witnesses as conclusive evidence. It is the EQC's duty to determine the witnesses' credibility and apply the appropriate weight to their testimony.
4. Based on the evidence there is potential that the water applied to the soil could meet the permitted effluent limits and still cause a slight to moderate reduction in infiltration according to the Hanson Graph if the permit is not modified to include the equation,  $SAR < 7.10 \times EC - 2.48$ . Such a reduction in infiltration would cause a measurable decrease in crop and livestock in violation WQ Rules Chapter 1, § 20. This equation should be added to the permit.
5. The DEQ, with the assistance of Barrett, is the appropriate body to interpret and implement the EQC's decision to include the equation,  $SAR < 7.10 \times EC - 2.48$  into the Palm Tree Unit permit. The decision to modify the Palm Tree Unit permit should be remanded to the DEQ.

**IT IS THEREFORE HEREBY ORDERED THAT:**

The motion to remand the Palm Tree Permit is hereby granted. The DEQ shall modify the Palm Tree Permit in compliance with this order and the Water Quality Division's Rule and Regulations Chapter 1, Section 20, Agriculture Use Protection policy in effect on the date of this ORDER.

DATED this 28<sup>th</sup> day of February, 2007

  
Jon Brady, Hearing Examiner

## CERTIFICATE OF SERVICE

I, Kim McGee, certify that at Cheyenne, Wyoming, on the 5<sup>th</sup> day of March, 2007, I served a copy of the foregoing **FINDINGS OF FACT, CONCLUSIONS OF LAW AND ORDER TO REMAND** by depositing copies of the same in the United States mail, postage prepaid, duly enveloped and addressed to:

Hadassah Marie Reimer  
Holland & Hart, LLP  
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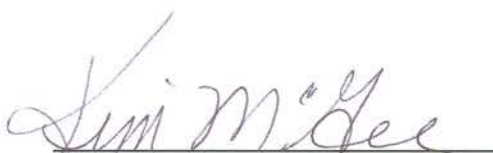
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also to the following persons via interoffice mail:

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