WD 34 2004

State of Idaho
DEPARTMENT OF WATER RESOURCES
1301 North Orchard Street, P.O. Box 83720, Boise, Idaho 83720-0098
Phone: (208) 327-7900 FAX: (208) 327-7866

DIRK KEMPTHORNE
GOVERNOR

KARL J. DREHER
DIRECTOR

August 11, 2004

Jim Gregory
Warm Spring Ranch
5306 Zollinger Rd
Mackay, ID 83251

Re: Proposed Alternative Mitigation Plan Dated August 8, 2004

Dear Mr. Gregory:

The Idaho Department of Water Resources (IDWR) has received your proposed alternative mitigation plan dated August 8, 2004. Your plan and accompanying cover letter was forwarded to me for response. Your plan was submitted on behalf of Warm Springs Ranch but our records show that Custer Springs LLC owns the water rights identified in your plan. Change of water right ownership forms should be filed with IDWR if Warm Springs Ranch is the current owner of the Custer Springs LLC rights. Your proposed mitigation plan includes the following items:

1. Credit for that portion of both ground water pumped and surface water diverted that is applied to your lands that return to the aquifer.

2. Credit for "shrink" or conveyance losses associated with delivery of your surface water rights in the Fish Hatchery Ditch.

3. Incidental recharge as a result of flood irrigating a portion of your land under your surface water rights while other portions of your land are being harvested.

IDWR has determined that this is not an acceptable mitigation plan for the following reasons.

1. The portion of water diverted from both ground and surface water sources that returns to the aquifer is incidental to irrigation of your lands. This amount of water was accounted for in the Ralston and Johnson study referenced in your plan and cover letter. In other words, return flow to the aquifer from ground water pumping was deducted from the estimate of depletions to the Big Lost River. Mitigation or augmentation requirements outlined in the Water District 34 water distribution rules do not require a one to one ratio of replacement water to annual ground water withdrawals. The total mitigation requirement in Basin 34 for junior ground water pumping is limited to the estimated

percentage of depletion to river flows caused by the pumping. This depletion estimate is separate from the amount of ground water pumped that returns to the aquifer. At the time the rules were adopted, the depletion percentage was estimated to be 13 percent of average annual pumping where average annual pumping was determined to be 47,000 acre-feet. Average annual depletion therefore was set at 6,110 acre-feet. The rules provide that this depletion estimate should be revised based on updated annual pumping data. Since annual pumping has increased significantly in recent years, the estimated percentage of depletion would be somewhat higher than 13 percent. IDWR determined that the 13 percent depletion figure in the rules should be applied to any mitigation request in 2004 because the estimated depletion percentage figure was not adjusted or reviewed at the annual water district meeting. The Water District 34 rules also provide that direct mitigation or replacement water can be provided to users making a request, particularly if that amount is less than the 6,110 acre-feet and will satisfy the senior right holders making the request. The amount of direct mitigation being provided to the Jensens this year is only about 225 acre-feet, far less than the 6,110 acre-feet depletion amount.

2. The conveyance losses that you experience in the Fish Hatchery Ditch are incidental to delivery and beneficial use of water to your land. These conveyance losses are normal and consistent with the historical use of the rights, and occurred prior to the development of your ground water rights. These conveyance losses occur regardless of whether or not you are diverting ground water.

3. Conversion from sprinkler irrigation to flood irrigation on a portion of your surface water irrigated land during hay cuttings would cause some increased incidental recharge during part of the year when the water historically was probably not diverted and left in the creek. This approach only seems to alter the pattern or timing of your surface water diversions during part of the year, and would not provide any net gain to the hydrologic system. In fact, this approach would probably cause a net depletion to the hydrologic system due to the increased consumptive use associated with flood irrigating a portion of the harvested land. This approach would not compensate for the depletion caused by pumping you ground water on separate land.

The purpose of mitigation is to provide replacement water or other compensation in order to be allowed to continue to divert junior ground water rights out-of-priority. Any diversion of ground water from your well is out-of-priority with respect to senior surface water rights, and is subject to the previous IDWR curtailment orders. In the cover letter that accompanied your mitigation plan you state that you "do not intend to participate in the existing mitigation plans which fund additional ground water pumping" and that you "intend to quit ground water pumping pending approval of the attached mitigation plan." Obviously, if you do not use the well for the remainder of the season as a result of IDWR's denial of your proposed mitigation, then there will be no need for the watermaster to enforce IDWR's order. However, you may wish to re-consider this position since the cost of joining one of the two accepted mitigation plans and continued operation of your well this year is estimated to be less than $20 per user.

Please contact Gary Spackman or me directly at the office listed on this letterhead if you have further questions or concerns regarding this matter.

Respectfully,

Tim Luke
Water Distribution Section

cc: Bob Duke, Watermaster, Water District 34
Gary Spackman, IDWR

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WARM SPRINGS RANCH
5306 Zollinger Rd.
Mackay, ID 83251
Phone: (208)588-2447 Fax: (208)588-2457

Karl J. Dreher
Director - Idaho Water Resources
1301 North Orchard Street
Boise, ID 83706

8 August 2004

Dear Mr. Dreher,

During the irrigation season of 2004, the Idaho Department of Water Resources (IDWR) issued an **ORDER BEFORE THE DEPARTMENT OF WATER RESOURCES OF THE STATE OF IDAHO** IN THE MATTER OF DISTRIBUITION OF WATER TO WATER RIGHT NOS. 34-372A, 34-372B, AND 34-690B. This order, as it relates to ground-water users in Basin 34, states that mitigation will be required to compensate the above water right holders for losses in surface irrigation water (injury) due to ground-water pumping. This "injury" is based on a 1991 study entitled Ground-Water Pumping Impacts on Surface Water Irrigation Diversions from Big Lost River and authored by G. S. Johnson, D. R. Ralston, and L. L. Mink. I do not accept Johnson et al. and IDWR's apparent dismissal of the other factors that impact delivery of the above rights, namely, reduced precipitation, conversion from flood to sprinklers (and associated reduction in return flow), and expansion.

Additionally, IDWR appears to have disregarded the fact that Johnson et al. focused their study downstream from Mackay Reservoir. In fact, while IDWR has included the area upstream from Mackay Reservoir for the purposes of determining injury and assessing mitigation, they have not allowed water right holders above the reservoir to call for mitigation (IDAPA Rule 37.03.12.050.04). The underlying assumption of the above rule seems to be that ground-water users below the reservoir CAN NOT injure water users above the reservoir, presumably because they are drawing water from a different aquifer. Based on this assumption, which I believe to be true, and the geology of the area upstream from Mackay Reservoir, which is alluvium aquifer underlain by limestone which emerges at the Mackay Dam, ground-water pumpers upstream from the reservoir should be allowed to mitigate ground-water withdrawals by recharging the aquifer from which water was removed.

Therefore, I have prepared the attached mitigation plan to mitigate the effects of water removed from the aquifer upstream from Mackay Reservoir by the Warm Springs Ranch.

The owners of the Warm Springs Ranch intend to remain in compliance with the accepted water law. However, we believe that IDWR either skipped or mis-answered the second question in the decision tree from Johnson et al. Table 15 which states "Can

impact area be determined?" We feel that impact areas can be determined and that following the decision tree our ranch would fall into the area of no impact, given that we are in a different aquifer. We also believe that if ground-water pumpers are injuring surface water rights it is asinine to mitigate those surface water rights by pumping additional ground-water. Therefore, we do not intend to participate in the existing mitigation plans which fund additional ground-water pumping. Conversely, we intend to quit pumping ground-water pending approval of the attached mitigation plan. Therefore, we urge you to decide promptly so we can either resume pumping or cut our losses by prematurely harvesting the crop.

Sincerely,

Jim Gregory

Jim Gregory
Ranch Manager

CC:
Lenore Hardy Barrett, State Representative
Don Burtenshaw, State Senator
Lin Hintze, Custer County Commissioner – Mackay
Dirk Kempthorne, Governor
JoAn Wood, State Representative

Mitigation Plan for Warm Springs Ranch

5306 Zollinger Rd

Mackay, ID 83251

The Warm Springs Ranch (Ranch) is located upstream from Mackay Reservoir along Warm Springs Creek in the Big Lost River drainage and irrigation basin 34. The Ranch irrigates approximately 373 acres of hay with 7.2 cfs of water diverted from Warm Springs Creek at Township 8 N. Range 22 E. Section 34 under water right numbers 34-469, 34-471, 34-467, 34-468. This water is delivered via the "Fish Hatchery Ditch." The Ranch also irrigates 115 acres of hay with 1.74 cfs from a ground-water well at Township 8 N. Range 22 E. Section 36 under water right number 34-7245A. The Ranch owns another ground-water right numbered 34-4035C with a diversion rate of 1.31 cfs which currently is unused and will remain so for the remainder of the 2004 irrigation season.

Mitigation has been "requested" by the Idaho Department of Water Resources (IDWR) for the ground-water being used during the 2004 irrigation season, which includes water right number 34-7245A.

The Warm Springs Ranch proposes to mitigate removal of 1.74 cfs of ground-water by providing that rate of infiltration (recharge) back into the ground-water aquifer. This rate of recharge will be provided by the following sources.

1. Johnson et al. (1991) state that 20% of water used on sprinkler irrigated lands infiltrates back to the aquifer. Therefore **0.384 cfs** of the 1.74 cfs ground-water right does not need to be mitigated as it returns to the aquifer.
2. It has been determined by the previous Water Master of Water District 34 (Doug Rosenkrance) and C. Brockway (Brockway Engineering, Twin Falls, Idaho) that "shrink" in the Fish Hatchery ditch is 21%. While some of this loss is undoubtedly evaporation and transpiration, the ditch bottom is primarily gravel and vegetation along the ditch is primarily sage brush.

Therefore, most of it likely infiltrates the ground and ultimately recharges the aquifer. We assume that 90% of the "shrink" ultimately enters the aquifer. The Ranch has 7.2 cfs right that is delivered through the Fish Hatchery Ditch as per the water right numbers above. Therefore, water owned by the Ranch enters the aquifer along the Fish Hatchery Ditch at a rate of **1.36 cfs** (7.2 cfs * 21% shrink * 90% return to the aquifer).

7.2
-1.36
5.84 cfs

3. Given the above shrink on the rights delivered via the Fish Hatchery Ditch, the Ranch irrigates with 5.48 cfs of water from Warm Springs Creek. This water is distributed via sprinkler systems through which 20% of the applied water enters the groundwater (Johnson et al. 1991). Therefore, **1.10 cfs** (5.48 cfs sprinkled * 20% return to the aquifer) of the water diverted from Warm Springs Creek and applied to the Ranch ground by sprinklers re-enters the aquifer.

> These amounts of water, 0.384 cfs which re-enter the aquifer from the ground-water pump and sprinkler system, plus 1.36 cfs from Fish Hatchery Ditch shrink of Ranch water, plus 1.10 cfs which re-enters the aquifer from the Warm Springs water and sprinkler system, sum to 2.844 cfs which more than mitigates the 1.74 cfs right being drawn from the aquifer. However, just in case my assumptions of evaporation and transpiration are wrong, we further propose to mitigate our ground-water withdrawal as below.

4. When we are harvesting the hay we will divert the water to a portion of the property for which the rights are pertinent and flood irrigate those areas. This amounts to flooding of the entire Warm Springs Creek right which equals 5.688 cfs (the 7.2 cfs right less 21% shrink in the ditch). Flood irrigation will continue through the harvesting of 2 crops, an average of at least 3 weeks/year. Thus 236.9 ac-ft of water (5.688 cfs * 60 seconds * 60 minutes * 24 hours * 21 days / 43560 ft^3/ac-ft) will be applied as flood irrigation. Again

some of the water applied will be lost as evaporation and transpiration. If we assume 50% loss and 50% infiltration, this would yield 118.45 ac-ft returned to the aquifer. If this volume were spread over the entire irrigation season, the rate would be equal to **0.358 cfs** (118.45 ac-ft*43560 ft^3/ac-ft / 60 seconds / 60 minutes / 24 hours / 167 days/irrigation season).

Therefore, total mitigation for 1.74 cfs of ground-water drawn from the aquifer is 3.2 cfs (0.384 cfs + 1.36 cfs + 1.10 cfs + 0.358 cfs, as outlined above in bold). We feel that this mitigation is adequate and should be accepted by IDWR for the following reasons.

- The amount of water withdrawn from the aquifer (1.74 cfs) is less than the amount being returned to the aquifer (3.2 cfs).
- The water is recharging the same aquifer from which it was withdrawn.
- The mitigation does not further compound the problem.
- Since the ground-water being removed is being replaced it is impossible to "injure" senior water rights.

Literature Cited

Johnson, G. S., D. R. Ralston, and L. L. Mink. 1991. Ground-Water Pumping Impacts on Surface Water Irrigation Diversions from Big Lost River. Idaho Water Resources Research Institute. University of Idaho, Moscow, Idaho.