

MEMORANDUM

Date: December 12, 2008
To: Water Right Files 63-7355 and 63-8382
From: Aaron Marshall
Re: Water Supply Bank Rental Review – Knife River gravel processing

Knife River submitted a Water Supply Bank rental application for the use of 90 acre-feet of ground water per year for two years, for the processing of gravel. The applicant indicated that the water would be diverted and reused, which may be fully consumptive.

A partial decree was issued in the SRBA for water right 63-7355 on February 16, 2007. The right is limited to 0.28 cfs and 118.0 acre-feet for irrigation of 75.0 acres. This right when combined with 63-8382 is limited to the irrigation of 75.0 acres and an annual diversion volume of 333.0 acre-feet.

A partial decree was issued in the SRBA for water right 63-8382 on December 13, 2006. The right is limited to 0.92 cfs and 215.0 acre-feet for irrigation of 74.0 acres within a 75.0 acre permissible place of use. This right when combined with 63-7355 is limited to the irrigation of 75.0 acres and an annual diversion volume of 333.0 acre-feet.

Since the industrial use is considered fully consumptive, the renter will be authorized to divert only the consumptive volume under the irrigation rights. In order to divert 90 acre-feet of water per year under these two rights, the renter will need to rent a total of 115.7 acre-feet under rights 63-7355 and 63-8382. The standard consumptive irrigation requirement for the area is 3.5 acre-feet per year and the standard field headgate requirement for the area is 4.5 acre-feet per year. Calculations are provided below.

63-7355 and 63-8382 combined

Combined Consumptive Volume = $333.0 \text{ af} \times (3.5 / 4.5) = 259.0 \text{ af}$
Acres Needed for Rental = $(259.0 \text{ af} / 75.0 \text{ ac}) \times 90.0 \text{ af} = 26.06 \text{ ac}$
Total Volume Needed for Rental = $(333.0 \text{ af} / 75.0 \text{ ac}) \times 26.06 \text{ ac} = 115.7 \text{ af}$

63-7355

$(0.28 \text{ cfs} / 75.0 \text{ ac}) \times 26.06 \text{ ac} = 0.10 \text{ cfs}$
 $(118.0 \text{ af} / 75.0 \text{ ac}) \times 26.06 \text{ ac} = 41.0 \text{ af}$

63-8382

$(75.0 \text{ ac} / 74.0 \text{ ac}) \times 26.06 \text{ ac} = 25.7 \text{ ac}$, needed to rent under this right
 $(0.92 \text{ cfs} / 74.0 \text{ ac}) \times 25.7 \text{ ac} = 0.32 \text{ cfs}$
 $(215.0 \text{ af} / 74.0 \text{ ac}) \times 25.7 \text{ ac} = 74.7 \text{ af}$

Combined Limits of Rental

0.42 cfs and 115.7 af (limited to diversion of 90.0 af)

Portions Remaining under Rights

63-7355: 0.18 cfs, 77.0 af, 48.9 ac

63-8382: 0.60 cfs, 140.3 af, 48.3 ac

Combined: 0.78 cfs, 217.3 af, 48.9 ac