

BROCKWAY
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Hydraulics

Hydrology

Water Resources

CHARLES E.
BROCKWAY,
PH.D., P.E.

CHARLES G.
BROCKWAY,
PH.D., P.E.

2016 NORTH
WASHINGTON
STREET • SUITE 4

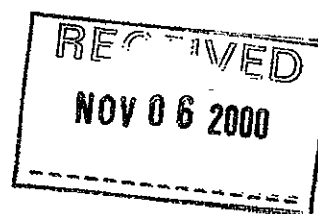
TWIN FALLS,
IDAHO 83301

208•736•8543

FAX: 736•8506

November 3, 2000

Kent Foster
Holden, Kidwell, Hahn & Crapo
P.O. Box 50130
Idaho Falls, ID 83405



Subject: Sagewillow Water Right 33-02133, Root Zone Storage

Dear Kent:

I have reviewed the permit, license, and IDWR Director's report on irrigated acreage on Ed Dumke's Sagewillow Ranch and, as you indicated, there are some definite discrepancies.

Figure 1 is a 1984 aerial photo of the Sagewillow ranch with the government land survey grid superimposed. The acreages in each 40 acre section listed on the permit for 33-02133, the licensed acres, and the recommended acres in the Directors Report are also shown on Figure 1. The permit requested 2440 acres; the license allowed 1480 acres although the sum of the listed acreages is 1440 acres. Note that the Director's Report shows only 698 acres and the 220 acres listed in Section 18 T7N R27E should actually be in T7N R28E. It should also be noted that the 698 acres listed in the Director's Report do not appear to reflect the hydrology of the area and the areas benefiting from the application of non-irrigation season diversions.

The objective of the non-irrigation season diversions allowed under the license is essentially to provide and store water to the shallow aquifer in the area to maintain water tables high enough to allow access by crop roots. This is essentially the definition of sub-irrigation, as we know it in Idaho. The area or acreage benefiting from the deep percolation of this water depends on the geology, timing and location of water application and shallow aquifer parameters.

I have utilized a 1984 color aerial photo of the ranch to delineate the distribution system utilized to 'spread' the water from diversions from Upper Spring Creek and Little Lost River on to the ranch. The ditch system is shown on the photograph attached as Figure 2. This delineation is based on field observations, which I made during several site visits to the ranch and on numerous aerial photographs of the area.

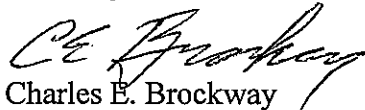
The ground water gradient is from north to south across the ranch so that water applied in the north effectively raises the water table for some distance south of the point of application. This water raises the water table, which benefits the vegetation and ultimately feeds some of the many springs and seeps on the south part of the ranch.

Figure 3 shows the boundaries of the area of the ranch which are benefited by the application of water under this right. Again, the location of water application, and geohydrology of the shallow aquifer system dictate the limits, of the area.

Acres within each 40 acre tract, which will receive the most benefit from the root zone storage allowed under water right 33-2133 are shown on Figure 3. The potential area benefited is greater than the 1440 acres allowed under the license; however, I have selected the 1440 acres which will receive the most benefit by the storage to be consistent with the license.

Table 1 is a spreadsheet showing the permit acreage, licensed acreage, Director's recommended acreage, and the acreage which will receive benefit from the root zone storage.
Please call if you have further questions.

Sincerely,



Charles E. Brockway

Enclosures: Maps(3)

Acreage Spreadsheet