

IN THE MATTER OF APPLICATIONS NOS.
13830, 13831, 13832, 13833, AND 13834
IN NAME OF H. J. BUCHENAU TO APPRO-
PRIATE GROUND WATER FOR IRRIGATION
AND DOMESTIC PURPOSES IN CRESCENT
VALLEY, EUREKA COUNTY, NEVADA.

RULING

Applications Nos. 13830 to 13834 inclusive were filed September 10, 1951 by H. J. Buchenau to appropriate ground water for irrigation and domestic purposes. The proposed points of diversion, places of use, and amounts of water applied for are as follows:

Application No. 13830 to appropriate 3.0 c.f.s. of ground water at a point within the SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 29, T. 29 N., R. 48 E. for the irrigation of 320 acres of land within portions of the W $\frac{1}{2}$ and W $\frac{1}{2}$ of E $\frac{1}{2}$ of said Section 29.

Application No. 13831 to appropriate 3.0 c.f.s. of ground water at a point within the SE $\frac{1}{4}$ SW $\frac{1}{4}$ Section 17, T. 29 N., R. 48 E. for the irrigation of 320 acres of land within the SE $\frac{1}{4}$ SW $\frac{1}{4}$ and E $\frac{1}{2}$ of said Section 17.

Application No. 13832 to appropriate 3.0 c.f.s. of ground water at a point within the NW $\frac{1}{4}$ NE $\frac{1}{4}$ Section 17, T. 29 N., R. 48 E. for the irrigation of 320 acres within portions of E $\frac{1}{2}$ of said Section 17; E $\frac{1}{2}$ E $\frac{1}{2}$ Section 8 and W $\frac{1}{2}$ Section 9, T. 29 N., R. 48 E.

Application No. 13833 to appropriate 3.0 c.f.s. of ground water at a point within the SW $\frac{1}{4}$ SW $\frac{1}{4}$ Section 27, T. 30 N., R. 48 E. for the irrigation of 320 acres of land within the W $\frac{1}{2}$ of said Section 27.

Application No. 13834 to appropriate 3.0 c.f.s. of ground water at a point within the SW $\frac{1}{4}$ SW $\frac{1}{4}$ Section 23, T. 30 N., R. 48 E. for the irrigation of 320 acres of land within the W $\frac{1}{2}$ of said Section 23.

Notices of these applications were published for the statutory period of time in the Eureka Sentinel, a weekly newspaper with general circulation within Eureka County, Nevada. Within the statutory period provided for the filing of protests, protests to the granting of permits under the above applications were filed on February 11, 1952 by Dan Filippini. The grounds set forth in said protests were as follows:

1. That said proposed well is situated within the grazing range of said protestant.
2. That said proposed well will interfere with and make useless the vested water rights of protestant in said area.

3. That said proposed well will interfere with and make useless and dry up the 12 flowing wells and 3 pumping wells of protestant in said area.
4. That said proposed well will interfere with and make useless and dry up water application rights of protestant in said area.

GENERAL

The applications being considered here are located in Crescent Valley which lies in the northcentral portion of Nevada in Lander and Eureka Counties. The railroad town of Beowawe on the south bank of the Humboldt River is at the north end of the valley. The valley is bordered on the west by the Shoshone Range; on the east by the Cortez Range; and on the south by the north end of the Toiyabe Range. About 590 square miles lie within the drainage divide of the valley.

The most northerly of the proposed wells (Application No. 13834) is located about ten miles southerly from Beowawe. The most southerly well location (Application No. 13830) is about three miles northerly from the Dean Ranch, now the headquarters of Protestant Dan Filippini. The wells are to be located in a northeasterly - southwesterly direction, paralleling the axis of the valley and will be near the toe of the alluvial fan along the west edge of the valley.

Under Permit No. 13435 issued to H. J. Buchenau, the applicant in this case, an irrigation well was drilled within the SW $\frac{1}{4}$ SW $\frac{1}{4}$ Section 33, T. 30 N., R. 48 E. and being between the most northerly and southerly proposed wells of Applicant Buchenau. This well, which was completed April 25, 1952, was drilled to a depth of 300 feet, the first water being encountered at 70 feet. The main water bearing aquifer was between 237 and 253 feet from the surface. In addition, some eight thinner aquifers were encountered in the drilling. When the well was completed the water level stood 57 feet from the surface, indicating that some of the aquifers were under hydrostatic pressure.

Protestant Dan Filippini has drilled four wells for irrigation purposes. One well, under Permit No. 13243, is located about three and one-half miles easterly from the Dean Ranch headquarters; the other three wells under Permits Nos. 13241, 13242 and 13427 are located about one-quarter of a mile southerly and southwesterly. Two of these later wells were drilled to a depth of 168 feet and the other one was drilled to a depth of 639 feet. The wells near the Dean Ranch are more than three miles southerly of the nearest proposed well of the applicant; the other irrigation well of protestant being over five miles distant.

In addition to the irrigation wells, of which only two are being used, the protestant has a number of stockwatering wells. These are of record in this office under Permits Nos. 13233 to 13240, inclusive, and Application No. 13965. The stockwatering wells are located more in the trough of the valley and all but four are more than three miles distant from any of the proposed wells of applicant. Stockwater Wells Nos. 1 and 2 under Permits 13233 and 13234 are from two and one-quarter miles to three miles southerly from the most southerly of the proposed wells of applicant (Application No. 13830). Stockwater Well No. 9 under Application No. 13965 is about two and one-half miles southeasterly from the well under Application No. 13830. Stockwater Well No. 8 under Permit No. 13240 is about one and three-quarters miles southeasterly of the proposed well under Application No. 13833.

FINDINGS

In 1948 the U. S. Geological Survey, Ground-Water Division, in cooperation with the office of State Engineer, made a ground water study in Crescent Valley. While the final report has not been prepared, much of the pertinent data collected has been studied by the State Engineer. In June, 1952, a trip was made to the area by Assistant State Engineer Edmund Muth and geologists George Maxey and Herbert Winchester.

The ground water reservoir of Crescent Valley is recharged by precipitation which falls within the drainage basin. The recharge takes place mainly by underflow and infiltration on the alluvial fans from perennial streams and flood waters from normally dry canyons. The major supply of stream run-off originates in the Cortez Range. Some of the streams which drain the west flank of this range are perennial streams. Indian Creek, the only perennial stream entering the west side of the valley, originates in the Shoshone Range. Estimates indicate that an average of over 30,000 acre-feet of surface water is annually available for infiltration to the ground water reservoir in the area of permeable sediments, the alluvial fans. Only a portion of this amount would be available for pumping.

Discharge of ground water from the valley is by (1) evaporation from the soil and transpiration by native vegetation; (2) underflow out of the valley, and (3) pumpage from the underground reservoir. Of these methods, evapo-transpiration probably accounts for greater than 90% of the discharge of ground water.

Analyses of available data indicate that about 15,000 acre-feet of water are lost from Crescent Valley by evapo-transpiration. Discharge by underflow from the valley to the Humboldt River is probably quite small due to the low gradient and impermeable formations. The total discharge from Crescent Valley,

including pumpage, is in the order of 17,000 acre-feet of water annually.

The amount of water that may be withdrawn from the underground reservoir is roughly indicated by the amount of ground water recharge to and discharge from the reservoir. The recharge is furnished by a portion of the estimated 30,000 acre-feet of stream flow. Discharge estimates indicate that about 56 percent of this runoff, or 17,000 acre-feet of water is annually discharged from the valley. Under ideal conditions, if the water table was lowered sufficiently by pumping over an area of approximately 75 square miles, the evapo-transpiration and underflow losses would be eliminated and a total of about 17,000 acre-feet of water would be available for beneficial use.

Under actual operations a full recovery of all of the water discharged from the valley would be impossible due to land suitability, ownership, topography, and yield of wells. On the basis of a 50 percent recovery, as much as 8 or 9,000 feet of water could be developed. Since the present beneficial use of ground water in the valley is less than 1,000 acre-feet, it appears that there are several thousand acre-feet of unappropriated water.

The ground water law (Section 10, Chap. 178 as amended 1947) provides that the State Engineer shall determine if there is unappropriated water in the area and shall issue permits if his findings are affirmative. The Act further provides that the right of the appropriator shall relate to a specific quantity of water, and that such right must allow for a reasonable lowering of the static water level at the appropriator's point of diversion, --- and shall not be construed as to prevent the granting of permits to applicants later in time on the ground that the diversions under such proposed later appropriations may cause the water level to be lowered at the point of diversion of a prior appropriator, provided that such lowering is reasonable.

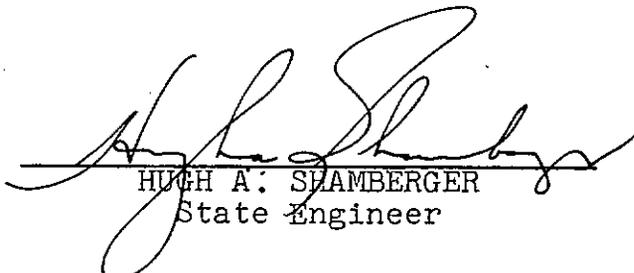
Protestant Dan Filippini is fearful that the pumping of water as contemplated by applicant will "dry up the 12 flowing wells and 3 pumping wells". The ground water reservoir in the area of protestant's pumping wells, and the majority of the flowing stock-water wells, is fed mainly from Indian Creek which drains a portion of the Shoshone Range and the several streams flowing from the southerly portion of the Cortez Range. The direction of the underflow is northward toward the proposed well sites of the applicant, the nearest site being some three miles distant from the pumping wells of protestant. It is unlikely that there will be any noticeable affect on the pumping wells by virtue of pumping the applicant's proposed wells.

It would be difficult to state whether or not the affect on the flowing stockwater wells would be sufficient to stop the free-flow. These wells are all of low specific capacity and conceivably there could be such affect. The water law provides that a prior appropriator must allow for a reasonable lowering of the water level.

RULING

Pursuant to our findings, the protests to the granting of permits under Applications Nos. 13830 to 13834, inclusive, are herewith overruled and permits will be issued subject to existing rights under said applications, following receipt of the statutory permit fees. Further, the permittee, H. J. Buchenau, must keep an accurate record of water pumped from each well and to equip the well with an air line so that water levels may be measured.

Respectfully submitted,


HUGH A. SHAMBERGER
State Engineer

Dated July 11, 1952.