

BEFORE THE WATER RESOURCES DIRECTOR OF OREGON

LANE COUNTY

IN THE MATTER OF APPLICATION G-10649 )  
IN THE NAMES OF ARIE MACK MOORE AND )  
EVANELL E. MOORE FOR A PERMIT TO USE )  
GROUND WATER FOR IRRIGATION PURPOSES )  
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STATEMENT, FINDINGS  
CONCLUSIONS AND ORDER

STATEMENT

Application G-10649 in the names of Arie Mack Moore and Evanell E. Moore was filed in the office of the Water Resources Director on February 12, 1982, for a permit to appropriate not to exceed 0.33 cubic foot per second of water from a certain ground water reservoir by means of five wells, being 25 gallons per minute (gpm) from 155-foot deep Well No. 1, 50 gpm from 220-foot deep Well No. 2, 50 gpm from 320-foot deep Well No. 3, 7 gpm from 330-foot deep Well No. 4, and 16 gpm from 220-foot deep Well No. 5, for irrigation of a certain 3.0 acres in SW 1/4 NE 1/4, 10.0 acres in SE 1/4 NE 1/4, 13.0 acres in NE 1/4 SE 1/4 and 1.0 acre in NW 1/4 SE 1/4 of Section 25, Township 17 South, Range 5 West, WM, Lane County, Oregon (Exhibit WRD #2).

Application G-10649 describes the locations of the said five wells in reference to the Southeast Corner of Section 25, Township 17 South, Range 5 West, WM, as follows:

- Well No. 1 - 1787 feet North and 1326 feet West, being within the NE 1/4 SE 1/4 of Section 25
- Well No. 2 - 2327 feet North and 1640 feet West, being within the NW 1/4 SE 1/4 of Section 25
- Well No. 3 - 2756 feet North and 1492 feet West, being within the SW 1/4 NE 1/4 of Section 25
- Well No. 4 - 3006 feet North and 240 feet West, being within the SE 1/4 NE 1/4 of Section 25
- Well No. 5 - 3047 feet North and 1483 feet West, being within the SW 1/4 NE 1/4 of Section 25

On March 16, 1982, a protest against approval of pending Application G-10649 was filed in the names of Kenneth H. Wilson and Gloria H. Wilson, and others, pursuant to the provisions of ORS 537.622(1). The protest alleges that the appropriation of ground water as proposed by Application G-10649 would conflict with the existing rights of the protestants for use of ground water (Exhibit WRD #3).

Pursuant to the provisions of ORS 537.622(2) and the Director's Notice of Hearing dated July 12, 1982 (Exhibit WRD #1), the matter was brought to hearing before James W. Carver, Jr., an employee of the Water Resources Department, authorized to preside in behalf of the Director, at Eugene, Oregon, commencing on August 4, 1982.

The protestants were represented by Charles S. Spinner, Attorney at Law, Eugene, Oregon.

The applicants were represented by Richard E. Miller of the firm Hershner, Hunter, Miller, Moulton and Andrews, Attorneys at Law, Eugene, Oregon.

The relative locations of the applicants' property (bounded with yellow) and the properties of the several protestants (bounded with red) located within Section 25 are shown on Figure 1, herein. In addition, properties belonging to two of the protestants are located to the south of the area shown on Figure 1, being within Section 36, Township 17 South, Range 5 West, WM. The locations of the five wells described in Application G-10649 are also shown on Figure 1.

During the course of the hearing, applicants amended pending Application G-10649 to limit the proposed appropriation of ground water to a rate of not to exceed 100 gallons of water per minute (gpm) from a total of four wells, for not to exceed 17 1/2 hours per week, with the annual season of use not to exceed a period of 100 days per year. The said amendments further limit the proposed appropriation as follows:

Well No. 1	(South A)	Appropriation of not to exceed 15 gpm
Well No. 2	(West)	Appropriation of not to exceed 40 gpm
Well No. 3	(Poplar)	Appropriation of not to exceed 40 gpm
Well No. 4	(East)	Omitted from Application G-10649
Well No. 5	(North)	Appropriation of not to exceed 5 gpm

Based on the record, the Water Resources Director makes the following Evidentiary Ruling, Findings of Fact, Conclusions and Order.

#### EVIDENTIARY RULING

The protest document (Exhibit WRD 3) filed by protestants on March 16, 1982, together with proof of service of a copy of the protest on the applicants, was supported by numerous letters and exhibits which were attached to and made a part of the protest. Certain letters and/or exhibits were offered by protestants as individual exhibits during the course of the hearing. Attachments 2-B, 11-C and 11-E, page 2, were offered by protestants and objected to by applicants as not relevant. The applicants' objections were properly sustained by the Hearings Officer.

Later, protestants offered all of the attachments to the said protest, en masse, contending that service of the protest (with the subject attachments) on the applicants complied with the requirements of OAR 137-03-050(5).

Applicants object.

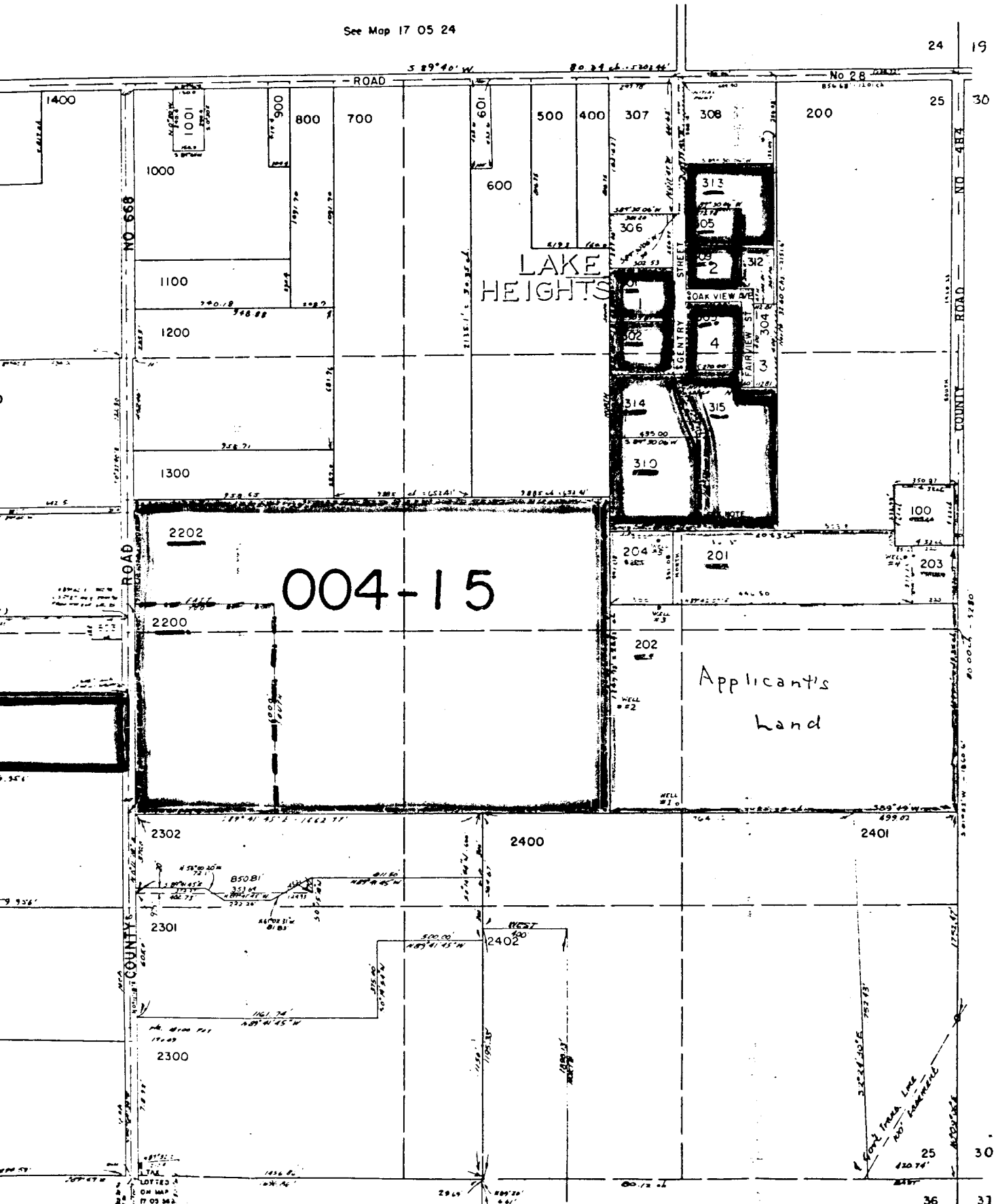
At the time of service of the protest on the applicants by the protestants, no hearing had been set. ORS 537.180 provides that whether a hearing will be held in such matters is within the discretion of the Water Resources Director. Protestants contention that service of the protest on the applicants was in compliance with OAR 137-03-050(5) is not well taken.

Section 25 T.17 S. R.5 W.M.

LANE COUNTY

1" = 400'

See Map 17 05 24



See Map 17 05 36 2

(Figure 1)

See Map 17 05 36 Volume 37, page 57

Where the authors or originators of the attachments were called and testified and were available for cross-examination, their testimony is best evidence. With reference to the balance of the attachments, the value of such facts as may be contained therein and not otherwise in the record, is outweighed by unsupported opinion of the several authors which is prejudicial against the applicants.

Applicants' objection is sustained.

#### FINDINGS OF FACT

Figure 2 is a portion of Plate 1, Geologic Map of the Eugene-Springfield Area, Southern Willamette Valley, Oregon, USGS Water Supply Paper 2018 by F.J. Frank, 1973. Figure 2 shows the topography and geologic units in the area of the applicants' and protestants' properties.

Jack P. Mrowka, Ph.D., a professor at the University of Oregon with teaching duties which include instructing classes in ground water hydrology, was called and testified as an expert witness for the protestants.

Jeffery H. Randall, M.A., Supervising Consulting Hydrogeologist for the firm of CH<sub>2</sub>M Hill, Portland, Oregon, was called and testified as an expert witness for the applicants.

The testimony of both expert witnesses was in agreement as to the general geology and ground water hydrology of the subject area; and that precipitation on the overlying land surface is the principal source of natural recharge to the ground water reservoir or reservoirs in question. Testimony of the two expert witnesses was not in agreement as to how such annual recharge to the ground water would be affected by variations in the seasonal and annual amounts of rainfall and by variations in the rainfall intensity.

Neither expert witness was able to establish any specific relationship between the annual precipitation on the overlying land surface and the quantity of recharge that would reach the ground water reservoir, or what time lag would occur between these two events.

Testimony and evidence of record agree that the Moore wells and the protestants' wells produce from the Eugene Formation, a marine-deposited sedimentary rock consisting of coarse to fine-grained sandstone with intercalated shale or tuffaceous lenses. Testimony and evidence concurred on the discontinuous nature of the sedimentary layers and on the great diversity of grain size and texture within the Eugene Formation.

Testimony and evidence of record indicate that the Eugene Formation, as a general rule, yields water very slowly to wells. The area has had a history of water problems, as the record indicates, and several dry holes and wells containing saline water have been drilled.

Several of the protestants were called and testified in regard to the location, construction date, depth and yield of their respective wells which are their only source of domestic water supply. Especially, the wells of the protestants that are located on the higher ground to the north and west of the Moore property yield water too slowly to meet the demands of usual and ordinary household uses and/or related uses.

WATER-SUPPLY PAPER 2018  
PLATE 1

EXPLANATION  
UNCONSOLIDATED DEPOSITS



Younger alluvium

Assorted coarse gravel and sand with some silt. Clean and pervious at most places. Occurs along the Willamette and McKenzie Rivers. Yields moderate to large quantities of water to wells.



Older alluvium

Largely sand and gravel, with mixtures of sand, silt, and clay beneath the flood plains of the Willamette and McKenzie Rivers. Is somewhat finer, less assorted, and less pervious than the younger alluvium. Tends to be of finer materials below a depth of 100 feet. Yields moderate to large quantities of water to properly constructed wells in the valley plain. Includes some terrace deposits in the southwestern part of the area and some younger alluvial deposits along the Long Tom River and other smaller streams; these deposits are of finer materials and yield water slowly to wells.

CONSOLIDATED ROCKS



Little Butte Volcanic Series

Tib, Little Butte Volcanic Series, undifferentiated, volcanic rocks, predominantly dacitic and andesitic flows and tuffs, with some rhyolitic flows and some basalts. Poor aquifer, yields small quantities of water to wells.  
Tibb, basalt flows; olivine basalt with some scoriaceous materials. Yield little water to wells.



Intrusive rocks

Dikes and sills of diabasic and basaltic composition. Yield little water to wells.

Eocene and Oligocene	Te	Eugene Formation	Marine-deposited sediments consisting of coarse-to fine-grained arkosic, micaceous sandstone, with intercalated shale and occasional lenses of fine volcanic ash. Generally yields water slowly to wells.
	Tf	Fisher Formation	Largely tuff and breccia with large amounts of basaltic and rhyolitic debris. Yields small quantities of water to wells.
Eocene	Ts	Spencer Formation	Marine deposited, consisting of a sequence of tuffaceous sandstone, shale, and mudstone. Yields water slowly to wells. Contains saline water locally.
	Tty	Tye Formation	Marine sandstone beds interbedded with siltstone and mudstone. In places, intruded by igneous rocks. Yields water slowly to wells. Contains water of poor chemical quality locally.

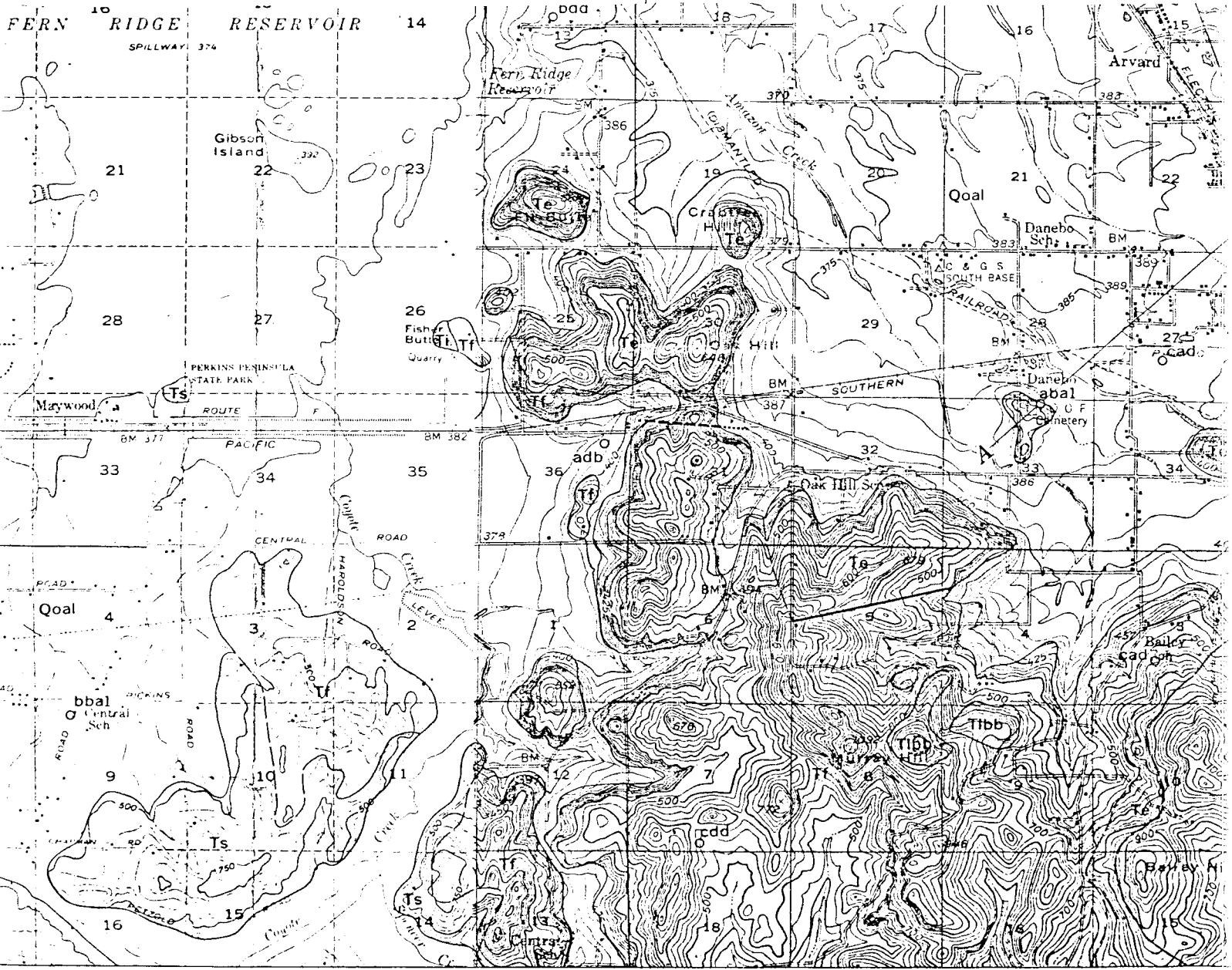
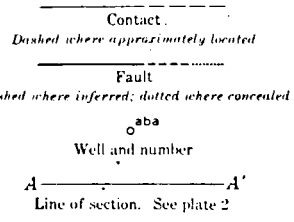


FIGURE 2 Volume 37, page 59

It was noted from testimony that other wells, not in use, have been constructed in among the said wells of the protestants, which have not produced water or have produced water too high in saline content to be usable for domestic purposes.

Though the protestants testified to the fact that ground water supply problems are often evident in the summer season of most years, many testified that obtaining enough water was more difficult during the 1981 summer than previous summers.

Applicant Moore testified that he first began pumping water from the South A Well during the summers of 1979 and 1980. He claimed he began irrigating from all five of his wells on July 28, 1981. Petersen and Kenneth Wilson testified that irrigation from several wells began on the Moore property around late June, 1981.

CH<sub>2</sub>M Hill ran an aquifer test using the Moore wells on November 12 and 13, 1981. The test involved a 19-hour drawdown/3-hour recovery test of the Poplar Well, followed by an 8-hour simultaneous drawdown test of Poplar, North, West and South A Wells. The test was performed to determine the aquifer parameters and the irrigation potential of the bedrock aquifer underlying the Oak Hills Cemetery.

The test showed that hydraulic boundaries are present between some of the Moore wells. Mutual interference also occurs between some of the wells. Aquifer transmissivity and storage coefficient (taking into account both early and late time data) were calculated to be 200 gpd/ft and  $7.0 \times 10^{-4}$ , respectively.

Randall testified that the test data indicated the aquifer responded as though the bulk of the permeability was from fractures. The CH<sub>2</sub>M Hill aquifer test report of record concludes that data from the 8-hour test indicated that the West and South A Wells appeared to dewater or depressurize the water-bearing fracture zones. The CH<sub>2</sub>M Hill aquifer test report also concludes that recovery measurements from the Poplar and North Wells indicated that recharge to the aquifer did not keep pace with pumping withdrawal during the 19-hour drawdown test. However, Randall indicated that only a three-hour recovery period was allowed and had observation been extended over a longer time, the recovery may have been complete.

No neighboring wells were observed during this test, thus any interference which may have occurred between the Moore wells and the protestants' wells as a result of pumping the Moore wells was not determined.

Assuming a transmissivity of 200 gpd/ft, a storage coefficient of  $7.0 \times 10^{-4}$  and a pumping regime very similar to that on Moore's amended application, and with the assumption that no barrier to ground water movement exists between the applicants' wells and the protestants' wells, a computer simulation of projected drawdown done by CH<sub>2</sub>M Hill calculated that maximum drawdown in a well 700 feet from Moore's North Well would be 10.2 feet after 100 days of pumping. Protestant Ken Wilson's well is located approximately 700 feet from Moore's North Well.

The computer model utilizes Theis assumptions of an unlimited aquifer with no recharge. Testimony and evidence of record indicate there in fact are boundaries between some of the Moore wells. Randall testified that despite boundaries limiting the extent of the producing aquifer, the drawdown simulated by computer would be accurate because the value of transmissivity that was used incorporated late-time drawdown data and thus took into account the effect of the hydraulic boundaries encountered by the expanding cone of depression.

Synoptic water level measurements were gathered by Water Resources Department on May 28, 1982. The data do not indicate one way or the other whether hydraulic boundaries are present between the Moore wells and those of the protestants. In addition, the data does not indicate evidence of long-term decline.

Considering the evidence and testimony of record, the water supply problems attested to by several protestants cannot be attributed conclusively to either lack of recharge by precipitation or to withdrawal from the Moore wells. One or the other, or a combination of these two (and possibly other) processes may have occurred to affect the ground water supply. Data from aquifer testing by CH<sub>2</sub>M Hill or from synoptic water level measurements by the Water Resources Department do not establish whether or not there is hydraulic continuity between the applicant's and protestants' wells. Also chemical data of record do not establish a basis for determining whether or not hydraulic continuity exists between the applicant's and protestants' wells.

#### ULTIMATE FINDING OF FACT

The testimony and evidence of record do not establish a probability that the appropriation of ground water proposed by Application G-10649, as amended, would result in substantial interference with the existing rights of the protestants to appropriate ground water for their domestic use.

#### CONCLUSION OF LAW

Pursuant to the provisions of ORS 537.615 to 573.625, Application G-10649 should be approved by issuance of a permit, subject to prior rights to appropriate from the ground water reservoir in question.

#### ORDER

NOW, THEREFORE, it is ORDERED that Application G-10649 in the names of Arie Mack Moore and Evanel E. Moore be approved by issuance of a permit with the provision:  
The right herein granted shall be subject to prior rights to appropriate ground water from the ground water reservoir which serves as the source of the appropriation authorized herein.

Dated at Salem, Oregon this 3rd day of February, 1983.

  
JAMES E. SEXSON  
Director

NOTICE: You are entitled to judicial review of this Order. Judicial review may be obtained by filing a petition for review within sixty days from the service of this Order. Judicial review is pursuant to the provisions of ORS 183.482.

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