

**STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY**

**REPORT OF EXAMINATION  
TO APPROPRIATE PUBLIC WATERS OF THE STATE OF WASHINGTON**

- Surface Water** (Issued in accordance with the provisions of Chapter 117, Laws of Washington for 1917, and amendments thereto, and the rules and regulations of the Department of Ecology.)
- Ground Water** (Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and amendments thereto, and the rules and regulations of the Department of Ecology.)

<b>PRIORITY DATE</b> June 10, 1983	<b>APPLICATION NUMBER</b> G 2-26353	<b>PERMIT NUMBER</b>	<b>CERTIFICATE NUMBER</b>
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<b>NAME</b> TIM SPOONER FOR AL ZAHN			
<b>ADDRESS (STREET)</b> 8821 Spurgeon Creek Rd. S.E.	<b>(CITY)</b> Olympia	<b>(STATE)</b> Washington	<b>(ZIP CODE)</b> 98503

**PUBLIC WATERS TO BE APPROPRIATED**

<b>SOURCE</b> well	<b>TRIBUTARY OF (IF SURFACE WATERS)</b>		
<b>MAXIMUM CUBIC FEET PER SECOND</b>	<b>MAXIMUM GALLONS PER MINUTE</b> 200	<b>MAXIMUM ACRE-FEET PER YEAR</b> 45	
<b>QUANTITY, TYPE OF USE, PERIOD OF USE</b> 45 acre-feet per year	irrigation of 30 acres	May 1 through October 1	

**LOCATION OF DIVERSION/WITHDRAWAL**

<b>APPROXIMATE LOCATION OF DIVERSION-WITHDRAWAL</b> 650 feet North and 350 feet West of the Southeast Corner of Section 31.
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<b>LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION)</b> Wm. Dunham D.L.C. #41	<b>SECTION</b> 31	<b>TOWNSHIP N.</b> 18	<b>RANGE, (E. OR W.) W.M.</b> 1 W.	<b>W.R.I.A.</b> 13	<b>COUNTY</b> Thurston
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**RECORDED PLATTED PROPERTY**

<b>LOT</b>	<b>BLOCK</b>	<b>OF (GIVE NAME OF PLAT OR ADDITION)</b>
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**LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED**

That part of the William Dunham D.L.C. #41 in Sec. 6, T. 17 N., R. 1 W.W.M. and Sec. 31, T. 18 N., R. 1 W.W.M. described as follows: Beginning at a point on the southerly line of the Olympia-Yelm Road 282.10 feet west of the east line of said Sec. 31; thence S 1°29'11" W 727.26 feet; thence S 2°02'43" W 1639.05 feet; thence N 86°50'01" W 1584.91 feet; thence N 1°49'13" E 1612.44 feet; thence S 87°48' E 593.05 feet; thence N 1°50'43" W 535.31 feet; thence N 88°09'17" E 190 feet; thence N 1°50'43" W 579.95 feet to the southerly line of said Olympia-Yelm Road; thence southeasterly along said road 970 feet, more or less, to the point of beginning.

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**DESCRIPTION OF PROPOSED WORKS**

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10" well originally drilled to 171' but deepened in 1984 to 294 feet. Turbine pump to portable sprinkler system.

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**DEVELOPMENT SCHEDULE**

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BEGIN PROJECT BY THIS DATE:  
Started

COMPLETE PROJECT BY THIS DATE:  
September 1, 1986

WATER PUT TO FULL USE BY THIS DATE:  
September 1, 1987

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**REPORT**

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**BACKGROUND:**

This application was received and accepted on June 10, 1983. Public notice appeared in The Daily Olympian on July 21, and 28, 1983. There were no objections filed as a result of the public notice.

The applicant, Mr. Tim Spooner, filed the application on behalf of the landowner, Mr. Al Zahn for 200 gallons per minute from two wells to irrigate 30 acres.

**INVESTIGATION:**

Previous to receiving the application, the Southwest Regional Office of the Department of Ecology received a number of calls and visits from the landowner, Mr. Zahn. The purpose of the visits was to obtain information about obtaining ground water for a possible future community water system for a proposed subdivision on the property.

Mr. Zahn was advised that a number of wells now existed along the Yelm Highway which borders his property on the north, and any well drilled near the highway could possibly cause well interference. Because such interference could limit his use of such a well, it is recommended that any well considered in the future be located within the southerly portion of his property.

The applicant obtained a lease of the property from Mr. Zahn and proceeded to drill a well at the northerly end of the property supposedly to avoid costly line extension costs of bringing three-phase power to the well site. The well was drilled prior to obtaining a permit.

It appeared that the applicant had no plans for drilling a second well but was hoping for full production from the well already drilled.

The applicant was notified that the well could not be used until a permit was applied for and issued. Upon receiving this notification, the application was filed along with a request for a temporary permit which the applicant stated was desperately needed to prevent loss of a newly planted strawberry field.

In consideration of both the application and request for a temporary permit, it was determined to first run a pumping test of the well in question to ascertain whether well interference would occur.

A series of three pump tests were conducted by the department's water resources investigations unit under the supervision of Linton Wildrick. The tests were run on June 21, 23, and 26, 1983 with each test being at some variance with the others.

The tests were run with a pumping rate of 150 to 160 gallons per minute, and the results indicated that at that rate of pumping a long-term effect of drawdown would occur in the Wilderness No. 4 well which is some 300 feet northwesterly of the applicant's well.

The conclusions of the pump tests and recommendations as contained in a memorandum report by Mr. Wildrick dated October 3, 1983 are as follows:

"Pumping the Spooner well at approximately 150 gallons per minute causes significant interference drawdown (12 to 13 feet) in the nearby Wilderness No. 4 municipal supply well. Interference drawdown in the shallower Grace Church well is much less (3 to 5 feet) and poses no problem because this well is not pumped at a high rate (probably less than 20 gallons per minute).

When both the Spooner and Wilderness No. 4 wells are pumping (150 and 125 gallons per minute, respectively), the water level in the Wilderness No. 4 well declines to at least 132 feet below land surface. Under this abstraction condition, only nine feet of water

remains above the top of the pump bowls in the latter well. A seasonal water table decline of five feet or more in late summer combined with continuous pumping by both wells due to heavy water demand for irrigation could conceivably cause the water to drop another nine feet to the pump bowls.

It is recommended that additional water level measurements be made in September to assess whether seasonal declines have affected pumping water levels. Although one can

calculate a transmissivity and storage coefficient from the test data, these aquifer parameters are of little value in predicting future water levels because of the unresolved recharge boundary or leaky aquifer effects. Further testing would be necessary before predictions could be made with any certainty."

On June 28, 1983, a temporary permit was issued to Mr. Spooner subject to specific conditions and limitations. This temporary permit was limited to a maximum withdrawal rate of 100 gallons per minute.

During pendency of the temporary permit, it became evident to Mr. Spooner that the subject well was unable to provide sufficient water for his anticipated needs.

As a result, the applicant retained the services of a well driller during the spring of 1984 and had the existing well deepened to 294 feet while casing out the upper aquifer. A subsequent pump test was made by the applicant with Department of Ecology personnel again monitoring the test.

During the pump test at the rate of 160 gallons per minute, the Wilderness No. 4 well was monitored, and there was no effect whatsoever as the result of pumping the deepened well. After four hours of pumping, it was concluded that the deepened well is in a separate aquifer, totally isolated from surrounding wells, and therefore, concerns about well interference have been addressed and alleviated.

The well as presently developed is restricted in its flow because of the limiting thickness of the aquifer. This was evidenced by the pump cavitating whenever the pumping rate was increased during the filling of the mainline.

The aquifer materials consist mainly of fine grain sands which tend to surface with the water upon pump start up. This will continue until a cavity is created around the pump screen. It would appear that the final developed pumping rate should reach 175 to 200 gallons per minute.

It appears that Tim Spooner, acting on behalf of the applicant, will use the water strictly for irrigation of strawberries during the term of his lease. The normal irrigation requirement for strawberries in the Puget Sound area is approximately 12 inches per irrigation season. Assuming an application efficiency of 70 percent for sprinkler systems, the gross requirements would be  $12 \text{ inches} \div 0.70 = \text{approximately } 18 \text{ inches}$  or 1.5 acre-feet per acre per season. For the 30 acres to be irrigated, the annual quantity would be 45 acre-feet.

#### CONCLUSION:

In accordance with Section 90.03 and 90.44 RCW, I find that there is water available for appropriation from the source in question and that the appropriation as recommended is a beneficial use and will not impair existing rights or be detrimental to the public welfare. Therefore, permit should issue, subject to existing rights and indicated provisions.

#### RECOMMENDATIONS:

I recommend this application be approved for a permit to appropriate ground water in amounts up to 200 gallons per minute from the well in question and 45 acre-feet annually for irrigation of 30 acres of strawberries.

Upon completion or revocation of the lease, the permittee must contact the Department of Ecology regarding any proposed changes in water usage.

Applicant is advised that notice of proof of appropriation of water (under which final certificate of water right issue) should not be filed until the permanent diversion facilities have been installed together with a mainline system capable of delivering the recommended quantity of water to an existing or proposed distribution system within the area to be served.

This authorization to use public waters of the state is classified as a Family Farm Permit in accordance with Chapter 90.66 RCW (Initiative Measure No. 59). This means the land being irrigated under this authorization shall comply with the following definition: Family Farm - a geographic area including not more than 2,000 acres of irrigated agricultural lands, whether contiguous or noncontiguous, the controlling interest in which is held by a person having a controlling interest in no more than 2,000 acres of irrigated agricultural lands in the State of Washington which are irrigated under water rights acquired after December 8, 1977. Furthermore, the land being irrigated under this authorization must continue to conform to the definition of a family farm.

The upper water table aquifer shall remain cased off from the pumping aquifer in order to prevent cascading waters depleting the water table aquifer.

All water wells constructed within the state shall meet the minimum standards for construction and maintenance as provided under RCW 18.104 (Washington Water Well Construction Act of 1971) and Chapter 173-160 WAC (Minimum Standards for Construction and Maintenance of Water Wells.)

A certificate of water right will not be issued until a final investigation is made.

The Water Resources Act of 1971 specifies certain criteria regarding utilization and management of the waters of the State in the best public interest. Favorable consideration of this application has been based on sufficient waters available, at least during portions of the year. However, it is pointed out to the applicant that his use of the water may be subject to regulation at certain times, based on the necessity to maintain water quantities sufficient for preservation of the natural environment.

At such time that the Department of Ecology determines the regulation and management of the subject waters is necessary and in the public interest, an approved measuring device shall be installed and maintained in accordance with RCW 90.03.360 and WAC 508-64-020 through WAC 508-64-040.

REPORTED BY: *Walter Deighton*

DATE: October 22, 1984

The permit fee is \$0.40 per acre or \$12.00 for irrigation of 30 acres.