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Water supply for Fraser Valley Trout  
Hatchery near Abbotsford, B.C.

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The Department of Public Works is working on plans for the expansion of a fish hatchery which has been purchased by the Department of Recreation and Conservation, Fish and Wildlife Branch. The Hatchery is located two miles to the south of Abbotsford (see figure 1). Details of the Hatchery site are shown in figure 2. Notes on the previous correspondence and investigations carried out by the Groundwater Division and others in connection with the Hatchery site are summarized separately.

The following are the conclusions and recommendations of this investigation.

1. The water supply requirements for the Hatchery are understood to be:

Maximum ..... 20 c.f.s.  
Minimum ..... 10 c.f.s.

2. Total surface water flow on Riverside Road ditch adjacent to the Hatchery collected from all springs - 9.3 c.f.s. (see figure 2 for details of Mr. Zalanfy's measurements).
3. The amount of water taken from this ditch at the Sumas Municipality water supply intake which is located by the pipeline right-of-way, has yet to be determined. \*
4. Sumas Municipality, according to Reeve Thomson, is considering plans for a production well site, near the Fish Hatchery, capable of yielding over 500 U.S. gallons per minute. A tentative site has been selected at the intersection of the gas pipeline right-of-way and the old railway grade (see figure 2). A well at this location may reduce the 1.2 cubic feet per second discharge from the spring supplying "stream 6" (see figure 2).
5. A spring which supplies a flow of 2.5 c.f.s. to the Hatchery is located close to the present test well. During test pumping, the discharge on this spring was reduced (see notes for details), and if production wells are later located at this site, the discharge on this spring would be still further reduced.
6. In an estimate of the costs of a surface water supply, the possibility of pollution from water in the Riverside Road ditch must be considered. To avoid pollution, surface water may have to be intercepted near the source

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\* Consultant for Sumas Municipality, Mr. Hugh Brackington, was contacted by phone today, and stated intake for emergency use only, and is used only at times, may be 100,000 Imp gallons per day at most.

or the springs at the toe of the terrace, and piped at additional cost to the Hatchery.

7. In an assessment of groundwater development costs for a supply of 10 c.f.s. it will be necessary to plan on two more test wells, as insufficient information is at present available on which to base a groundwater supply involving 10 c.f.s. or more. The test wells can be located on the old railroad grade. The first well can be drilled 300-400 feet to the south of the existing test well. Subsequent sites will depend on results of drilling and test pumping and could be decided by consultation between the Groundwater Division and Department of Public Works as work proceeds.

8. Two approaches for groundwater development of 10 c.f.s. at the Hatchery site are suggested here:

(A) Drill and test two eight-inch test wells at an approximate cost of \$6,330.00.

If results of the test drilling are favourable then construct four 16-inch production wells capable of a combined yield of 4,500 U.S. gallons per minute (10 c.f.s.) at an approximate cost of \$25,900.00.

Approximate cost of (A) ..... \$ 32,230.00

(B) Drill and test two 16-inch production test wells at an approximate cost of \$12,940.00.

If the results of the test drilling are favourable, drill two further 16-inch production wells to give a total yield for four wells of 4,500 U.S. gallons per minute (10 c.f.s.). Approximate cost of two production wells .... \$12,940.00

Approximate cost of (B) ..... \$ 25,880.00

Further details on costs of two eight-inch test wells in (A) are approximately as follows:

Cost of drilling and casing two eight-inch test holes, each 130 feet deep at \$11.00 per foot .....\$ 2,860.00

Cost of 20 feet of eight-inch nominal size stainless steel Johnson's well screen (more screen length may be required) ..... \$ 1,258.00

Cost of two eight-inch casing shoes ..... \$ 90.00

Hourly work for setting screens, developing well, preparing and carrying out a pumping test, 120 hours at \$16.00 per hour ..... \$ 1,920.00

Mobilization and demobilization ..... \$ 200.00

\$ 6,328.00

Further details on the costs of one 16-inch production well with a 12-inch diameter well screen, capable of yielding 1000-1500 U.S. gallons per minute, are approximately as follows:

120 feet of 16-inch casing @ \$17/foot .....	\$ 2,040.00
Casing shoe .....	\$ 100.00
25 feet of 12-inch pipe size stainless steel Johnson's well screen and fittings .....	\$ 2,850.00
Hourly work setting screens, developing well, preparing and carrying out a pumping test. 80 hours @ \$16/hour .....	\$ 1,280.00
Mobilization and demobilization or moving between sites .....	\$ 200.00
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	\$ 6,470.00

*J.C.F.*

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