GOVERNMENT OF BRITISH COLUMBIA

# MEMORANDUM

TO Dr. J. C. Foweraker
Head
Groundwater Section

FROM A. P. Kohut
Senior Geological Engineer
Groundwater Section

February 14, 1977

SUBJECT Groundwater Levels -
McTavish-Cresswell Area, Saanich

OUR FILE 0239013

YOUR FILE

Following complaints in early August, 1976 by local residents of wells going dry in the McTavish-Cresswell Road area, Saanich, the Groundwater Section undertook a well inventory in the area to ascertain the problem and collect background data. Local residents were concerned that a nearby recently completed production well (Well 76-1) by the Sidney Waterworks District was affecting the neighbouring wells. This memorandum summarizes the situation to date.

Sufficient information was obtained during the August, 1976 investigation which indicated some wells and springs had gone dry, and other wells were providing an inadequate supply due to lowered water levels. During the investigation, an automatic water level recorder was installed on a well belonging to Mr. Hughes to monitor water level fluctuations in the area. Mr. Hughes was not using this previously flowing well as he had recently completed a new well after his spring had dried up and his former well stopped flowing. The Hughes well is located approximately 450 to 500 feet northwest of the Sidney Well 76-1. During the investigation the Sidney Well 76-1 was shutdown on August 15 and has remained inoperative since that time.

On August 11, 1976 a water level of 112 feet below ground surface was recorded in the Hughes well. Since that time the Hughes well has shown a dramatic recovery (Figure 1) and is presently flowing with a water level 6.8 feet above ground surface (February 5, 1977). Other wells in the area showed a somewhat similar recovery after the shutdown of the Sidney well, although the Hughes well has been fully documented.

In contrast to the behaviour of the Hughes well, other bedrock observation wells on the Saanich Peninsula showed little variation in water level throughout the period August, 1976 to the present (Figure 1). The relative magnitude of the recovery in the Hughes well can only be attributed to previous interference from the nearby Sidney Well.

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In summary, pumping from the Sidney Well 76-1 in the summer of 1976 affected nearby domestic wells. Apart from the inconvenience of the situation, in one instance an individual was faced with the added expenditures for drilling a new well. Future use of the Sidney Well at pumping rates at or in excess of those carried out in 1976 (50 to 80 gpm) will undoubtedly affect adjacent wells again. A long-term pump test (72 hours) with careful monitoring of adjacent wells, is required to determine the optimum long-term pumping rate of the well that will afford a minimum amount of interference on adjacent wells.

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APK/bmg

Feb. 5/77 - well flowing 5.76' above datum.

Well reported to be flowing
Dec. 25, 1976

Ground level

Automatic Recorder removed - replaced w/ manometer.

Datum: 1.0' above ground level

Beacon Ave Well (TR-3) T.D. 505' (bedrock well)

Jones well (WR-118-75) T.D. 155' (bedrock well)

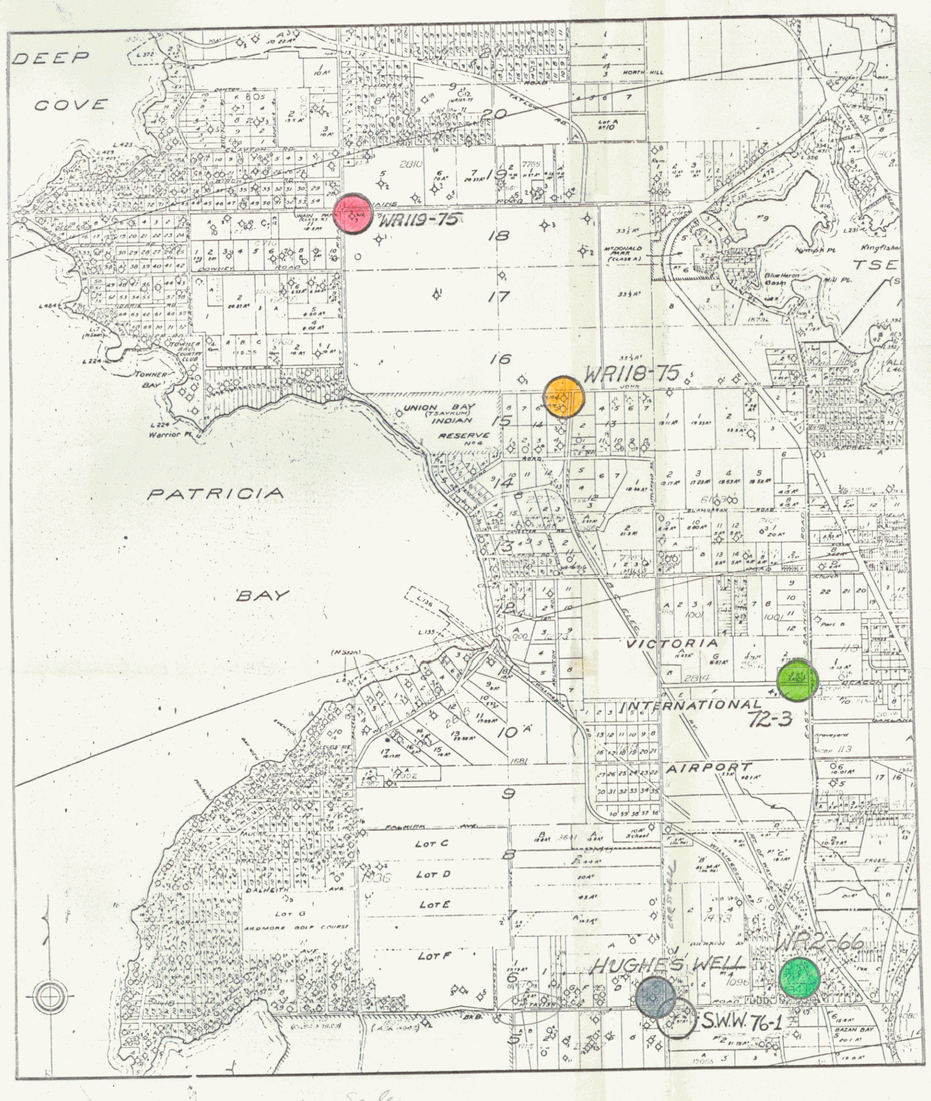
Pemberton Holmes (WR 119-75) T.D. 255' (bedrock well)

Mainwaring Well (WR2-66) - T.D. 48' (surficial well)

X June 15, 1977

Water Level in feet below datum

0
5
10
15
20
25
30
35
40
45
50
55
60
65
70
75
80
85
90




Hughes Well Site 1401378

Location: Corner Cresswell & McTavish N. Saanich,

Depth: Approx. ~~300'~~ 175'? (granite?)

(Rg. 1E Sec. 6 # 22 N. Saanich)

Dwn. By W. Hodge 27-1-77

Initial Reading (recorder installed)
Aug. 23, 1976 92.42'

Aug 11, 1976 113
- Aug. 20, 1976 102.00' below datum (manual reading)
Aug. 19, 1976 106.00' " " " "
* Aug. 16, 1976 Sydney well (76-1) shutdown

August | September | October | November | December | January

1976 | 1977