

MEMORANDUM

TO A. P. Kohut
 Senior Geological Engineer
 Groundwater Section

FROM M. Zubel
 Geological Engineer
 Groundwater Section

February 3 1978

SUBJECT Scott Point Waterworks District
 Water Supply.

OUR FILE 92-B-14
 YOUR FILE

Introduction:

At the request of Mr. A.A. MacTaggart of the Community Water Supply Division, Water Rights Branch in a memorandum dated January 20, 1978 to the Groundwater Section, a site visit was made of the proposed Scott Point Waterworks District drilling sites A and B. The following is a report of the site visit and recommendations as to the proposed drilling site and type of equipment to be used.

Site Investigation:

On Thursday, January 26, 1978, I met with Reg Taylor, Secretary of the Scott Point Waterworks District and together we visited the location of the two proposed drill hole sites A and B on Central Avenue (See Figure 1). Site A was located approximately 6 feet from the edge of the Long Harbour-Vesuvius Road bank and approximately 5 feet below the road elevation. To position a drill rig on this location would require either a grade to be constructed down to the drill hole site or the widening of the road shoulder by dumping and levelling approximately 100 cubic yards of fill. Site B was located approximately 60 feet from the edge of the road bank and only a few feet from the pond. The ground is marshy and several trees surround the site. To position a drill rig on this location would almost require a 60-foot long road to be built.

An investigation east and west of the proposed sites A and B revealed two other potential sites. Site C is located approximately 200 feet west of Site A (See Figure 1) and consists of a knoll immediately adjacent to the road shoulder, measuring approximately 100 feet long by 3 feet high by 8 feet wide. To position a drill rig on this site would simply require the levelling of this gravelly knoll. Site D is located on a private property approximately 400 feet east of Site A and consists of an old "wagon" road running across the valley. Access to this site would require permission from the private landowners and a right-of-way along a dirt road, which leads to the "wagon" road.

An investigation of the pond was also made to locate the source of pond water. The pond is dammed at both ends and the valley sides comprise the other boundaries. Some water is overtopping the eastern "dam" and approximately five gallons per minute was flowing into a marsh. No visible streams or springs were found, suggesting that the pond is probably spring fed at depth.

A.P. Phut

February 3, 1978

The depth to bedrock at the proposed drill sites was investigated by locating bedrock outcrops in the vicinity of the sites and referring to a bedrock geology map of the area (See Figure 2). According to the geology map, the area of investigation is underlain by shale dipping approximately 60° to the north. The only exposure of shale outcrop that I noticed within several hundred feet of Site A was an outcrop of shale on the southern side of the Long Harbour-Vesuvius Road. It was dipping approximately 60° to the North. Within the valley, containing the pond, no outcrops could be found. Based on the very few well records of holes drilled within and near the valley, the depth to bedrock at Site A appears to be shallow (less than 50 feet).

Aerial Photograph Analysis

A study of the aerial photographs of the area indicated a lineation oriented approximately North-South with part of the pond, the approximate location of Site C and a spring oriented along this lineation (See Figure 1). Data from a well (#25, Figure 1) yielding 13 gpm drilled near the spring indicated that a "running stream" was tapped within the shale zone at a depth of 35 feet. This data may suggest that the well encountered a fault zone and hence, suggests that the lineation is a fault. This fault zone may be the source of the springs oriented along the lineation.

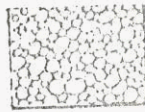
Conclusions and Recommendations

- 1) It is recommended that Site C be the first choice for a well because its location is near the possible fault zone and can be made readily accessible for a drill rig set-up.
- 2) Should Site C not be considered first, then the following choices should be (2) Site D, (3) Site A, (4) Site B.
- 3) Since the depth to bedrock is probably shallow, it is recommended that a bedrock well be drilled at least 200 feet deep using an air rotary drilling rig.
- 4) The proposed well should be at least 6 inches in diameter.
- 5) If any water-bearing permeable surficial materials are encountered during drilling, then these zones should be tested before additional drilling is carried out; otherwise,
- 6) the overburden should be cased and casing grouted at least five feet into the bedrock.
- 7) Any successful wells should be pump tested for 24 hours in the case of a surficial well and 72 hours if it is a bedrock well.

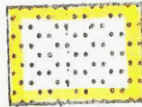
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LEGEND



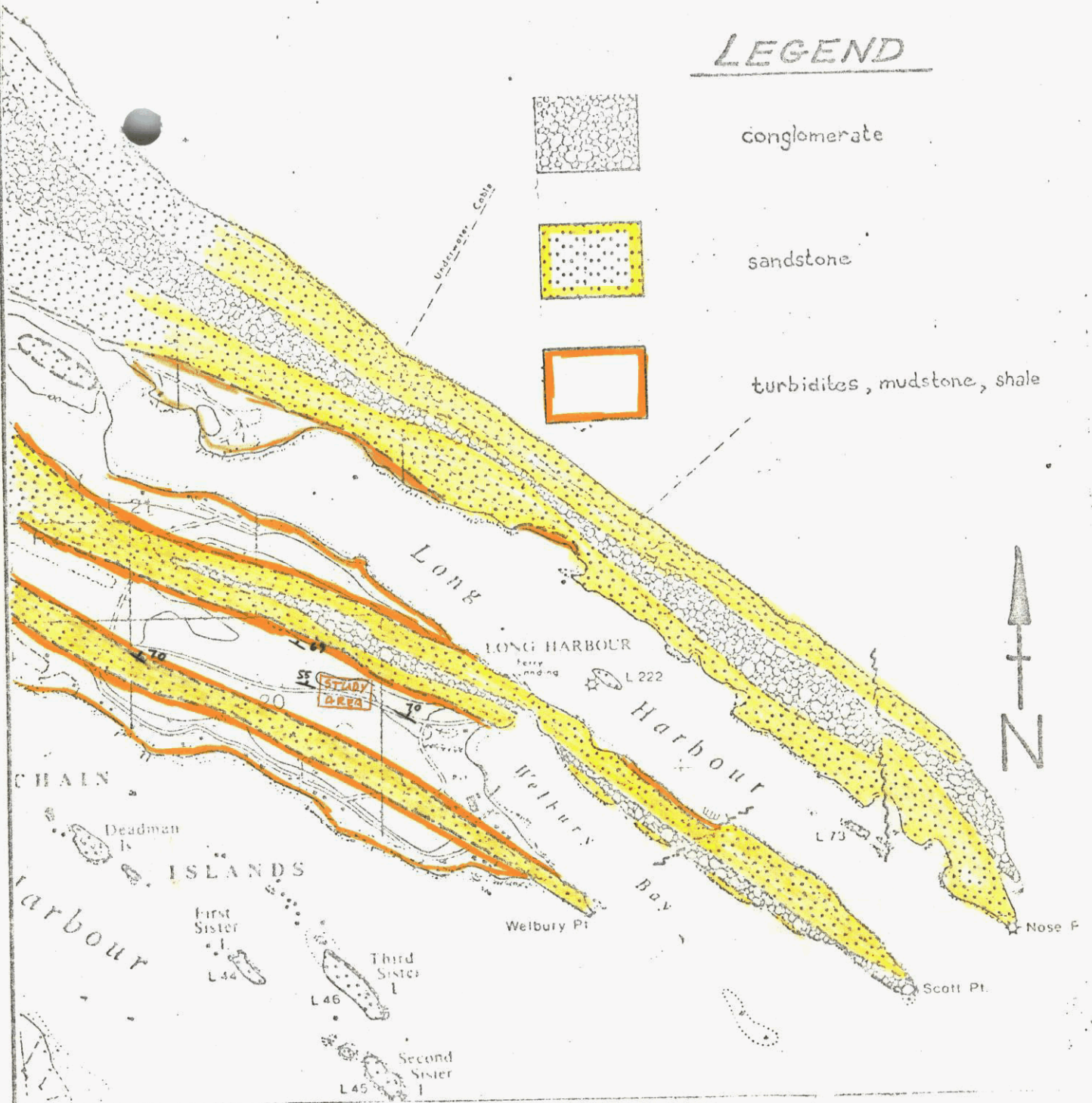
conglomerate



sandstone



turbidites, mudstone, shale



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FIGURE 2:
BEDROCK GEOLOGY
SCOTT POINT REGION