

SUITABILITY OF CONDITIONS FOR ONSITE WASTEWATER DISPOSAL  
FOR A PROPOSED GOLF COURSE CLUBHOUSE  
NEAR THE TRANS-CANADA HIGHWAY TURNOFF TO AGASSIZ

Prepared for  
BRIDAL FALLS GOLF AND COUNTRY CLUB  
18593 58th Avenue  
SURREY, B.C. V3S 1M3

Prepared by  
PACIFIC HYDROLOGY CONSULTANTS LTD.  
204 - 1929 West Broadway  
VANCOUVER, B.C. V6J 1Z3

February 26, 199~~X~~<sub>2</sub>

**PACIFIC HYDROLOGY CONSULTANTS LTD.**  
CONSULTING GROUNDWATER GEOLOGISTS

204 - 1929 WEST BROADWAY  
VANCOUVER, B.C. V6J 1Z3  
TELEPHONE: (604) 738-9232

February 26, 1992

Bridal Falls Golf and Country Club  
18593 58th Avenue  
Surrey, B.C. V3S 1M3

Attention: Mr. Norman Gaukel

Subject: Suitability of Conditions for Onsite Wastewater Disposal for a  
Proposed Golf Course Clubhouse Near the Trans-Canada Highway  
Turnoff to Agassiz

Dear Sir:

This letter is further to discussions on February 24 between Mr. Norman Gaukel, Golf Course Developer, and Mr. Ed Livingston, P. Eng., of Pacific Hydrology Consultants Ltd., onsite at the proposed golf course property near Bridal Falls (Lot A, Sec. 6, Tp. 3, R. 28, W6M., Plan 30121, N.W.D.).

## 1.0 INTRODUCTION

From the aforementioned onsite discussion of February 24 between Livingston and Gaukel, we understand that plans call for locating the Clubhouse for the proposed Bridal Falls Golf Course in the northeastern part of the parcel of land, which is bounded by Bridal Falls Road on the east and southeast and by the Trans-Canada Highway on the west and northwest. The Clubhouse will be supplied with domestic water from a well yet to be constructed and wastewater disposal will be by means of a conventional septic tank and tile drain field disposal system. The purpose of the preliminary investigation covered by this letter is to assess general suitability of the site for onsite wastewater disposal.

The location of the subject Property and the approximate locations of the test pits dug during the field investigation are shown on Figure 1 attached in Appendix A.

## 2.0 FIELD INVESTIGATION

The investigation covered by this letter-report consisted of a rapid field reconnaissance and the digging and examination of shallow subsurface conditions in three test pits. The lithologs of sediments encountered in the test pits are attached to this letter in Appendix B.

Test Pit No. 1 encountered silty sandy sediments down to a depth of 0.5 m (1.6 ft) where there was a change to blue-grey plastic silt. A thin zone of rusty mottling was present at the contact at 0.5 m; this mottled zone probably represents the maximum height of the water table, which certainly undergoes seasonal fluctuations. During digging, the test pit filled rapidly with water to a depth 0.5 m below surface.

Test Pit No. 2 was dug a few metres northeast of a mound of glacial sand and gravel. It was excavated in rather mixed patchy sand and silty sand to plastic clay-silt to a depth of 1.35 m (4.4 ft). Questionable mottling was present at 0.8 m (2.6 ft) but no water was encountered.

Test Pit No. 3 which, as shown on Figure 1, is located in the south-central part of the subject Property, was dug through thin gravelly soil into a varicoloured mixture of silt, fine sand and gravelly sand to a depth of 1.55 m (5.1 ft), with broken pieces of wood (probably roots) to the bottom.

### 3.0 SITE TOPOGRAPHY, GEOLOGY AND HYDROLOGY

The subject Property is all on a smooth gently north-sloping surface used in the past for pasture. The topography and setting suggests that the subject Property is on a fan. However, since there is no perennial creek at the head of this fan, it may be largely a fossil feature which is at least partly a debris fan built during occasional periods of very intense precipitation.

Near the northwest boundary of the subject Property, a prominent mound of sand and gravel is superimposed on the fan. This mound is clearly a glacial feature, perhaps best called a kame. The presence of a kame suggests that the main part of the fan was in place when there was still some glacial ice in the area.

The three test pits which were dug as part of the investigation described in this letter show that the fan sediments down to two metres are predominantly fine grained and not gravelly as might be expected on a fan. In Test Pit No. 2, located near the mound of sand and gravel mentioned above, a patch of charcoal was present at a depth of 1.35 m (4.4 ft). The charcoal was quite decomposed. The fine-grained sediments in Test Pit No. 2 had a disturbed appearance, with irregular colour and pieces of wood. These sediments suggest that the subject Property may have been disturbed by land-clearing operations using heavy equipment. The original timber in this area was very large so the clearing of stumps may have disturbed the ground to a depth of more than one metre (3.3 ft). The charcoal may be from the burning of land-clearing debris.

#### 4.0 WASTEWATER DISPOSAL

In general, conditions for construction and operation of conventional wastewater disposal fields on the proposed Golf Course Site are quite good, except at the northeast end of the Property where the sediments are finer and where, in the lowest part of the area, the water table is less than one metre below surface.

Wastewater disposal facilities could be located on the part of the subject Property near Test Pit No. 1 but a non-standard field design would be required. However, conditions in the area of Test Pits No. 2 and No. 3 are quite suitable for onsite wastewater disposal using conventional facilities.

Wastewater from disposal fields will move downward to the water table in the fan sediments and then northward through the sediments down the slope of the fan, to join the major groundwater flow system which flows from the mountain front toward the Fraser River.

#### 5.0 CONCLUSION

Water from a properly constructed and operated disposal system to serve the proposed Golf Course Clubhouse will not have a perceptible effect on water quality in the area and will have no effect on water wells.

Bridal Falls Golf and Country Club  
Suitability of Conditions for Onsite Wastewater Disposal for a Proposed Golf  
Course Clubhouse Near the Trans-Canada Highway Turnoff to Agassiz  
February 26, 1992 - Page 5

---

We trust that this letter contains the information you require concerning the general suitability of conditions for disposal of wastewater from the proposed Bridal Falls Golf Course Clubhouse. If you have questions about the contents of this letter or if you need more information, please contact us.

Yours truly,

PACIFIC HYDROLOGY CONSULTANTS LTD.

*Ed Livingston*

Ed Livingston, P. Eng.



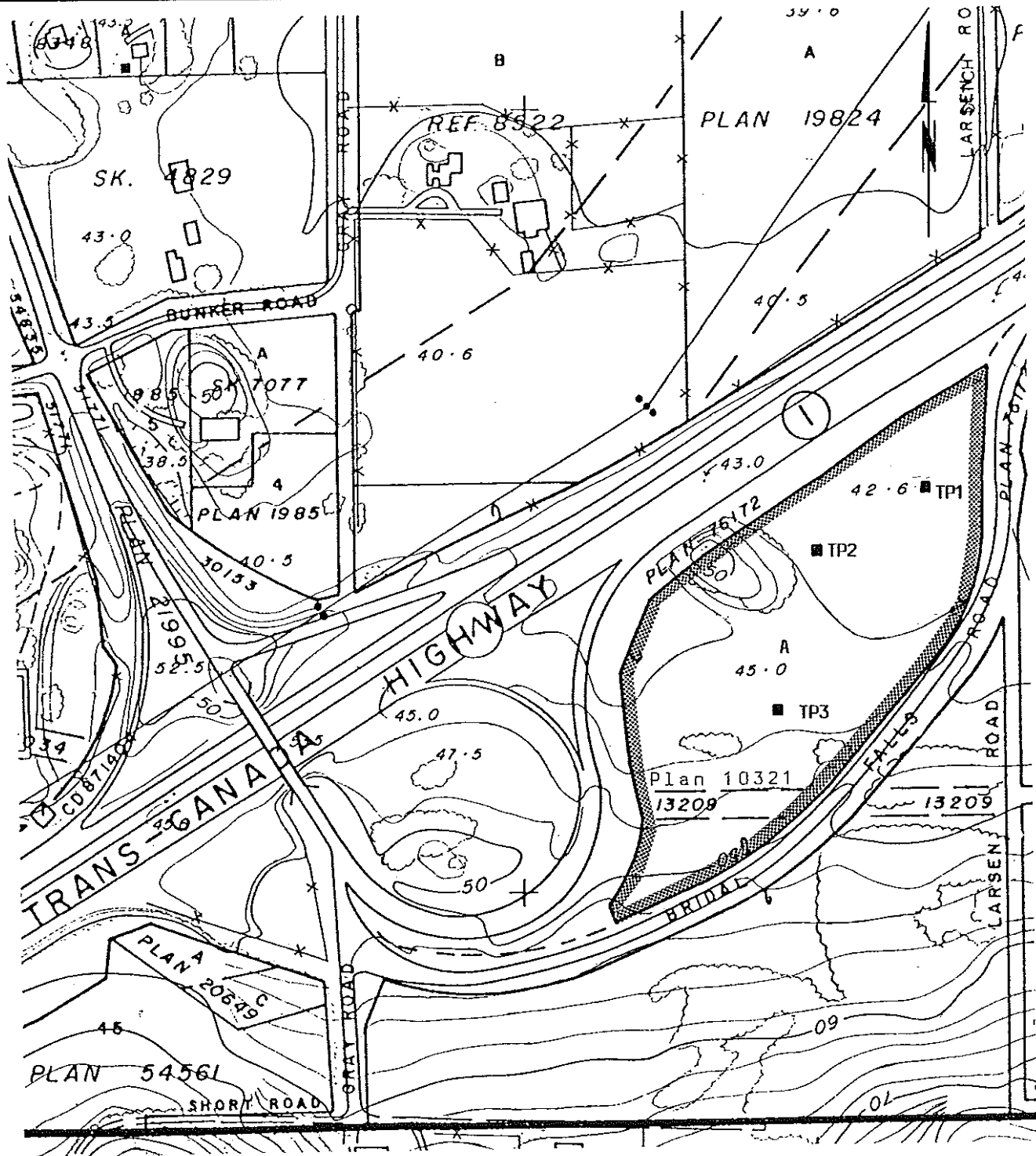
Attachments

**APPENDIX A**



**SITE LOCATION PLAN**

FIGURE 1

TEST PIT LOCATIONS ON PROPOSED  
BRIDAL FALLS GOLF COURSE PROPERTY



Notes:

1. The scale of the base map is approximately 1:3900; contour interval is two metres.
2.  Boundary of proposed Bridal Falls Golf Course.
3.  Approximate (unsurveyed) location of a test pit (test pit lithologies are contained in Appendix B).



**APPENDIX B**

**TEST PIT LITHOLOGS**

## BRIDAL FALLS GOLF COURSE TEST PIT LITHOLOGS

Description of Property: A short distance east of the Agassiz-Rosedale Highway and Trans-Canada Highway interchange, between Bridal Falls Road and the Trans-Canada Highway.

Legal description of Property: Lot A, Sec. 6, Tp. 3, R. 28, W.6M., Plan 30121, N.W.D.

Date of test pit digging: February 17, 1992.

### Test Pit No. 1

#### Litholog:

0 - 0.5 m (0 - 1.6 ft)	dark brown, heavy plastic silt loam with a thin rusty mottled zone at 0.5 m
0.5 - 1.5 m (1.6 - 4.9 ft)	blue-grey plastic silt with a water level of 0.5 m after 30 minutes.

Location: In the northeastern part of the Property.

### Test Pit No. 2

#### Litholog:

0 - 1.35 m (0 - 4.5 ft)	mixed patches of very fine sand and silt or clay-silt, with a large patch of charcoal at 1.35 m; possible poorly developed mottling at 0.8 m (2.6 ft)
1.35 - 1.80 m (4.5 - 5.9 ft)	tan plastic clay-silt; damp but no free water.

Location: In the north-central part of the Property on the east side of the sand and gravel mound.

### Test Pit No. 3

#### Litholog:

0 - 0.15 m (0 - 0.5 ft)	black, very gravelly soil with a thin root zone; pebbles are mostly schist or shale
0.15 - 1.55 m (0.5 - 5.1 ft)	varicoloured mixed silt, fine sand and minor gravel with fragments of old roots to the bottom.

Location: In the south-central part of the Property, east of the gas line.