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Water Investigations Branch

A REVIEW OF GROUNDWATER CONDITIONS ON GABRIOLA ISLAND

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A REVIEW OF GROUNDWATER CONDITIONS ON GABRIOLA ISLAND

1. INTRODUCTION

The Groundwater Section of the Water Investigations Branch, Ministry of the Environment, has been involved in groundwater studies on Gabriola Island since the summer of 1971. This involvement has included the retaining of Robinson, Roberts, and Brown Ltd., a groundwater consulting firm of Vancouver, to conduct a drilling program during the summer of 1972, for the purpose of obtaining information on the groundwater geology and hydrology of Gabriola Island. The results and subsequent conclusions on the hydrogeology of the Island, derived from this drilling program, have been referred to in part throughout this text.

Additional investigations, including some "door-to-door surveys" to obtain local groundwater information, have been conducted by the Groundwater staff during 1973 and 1974. From 1975 to present, investigations have been limited to the collection of water level data and maintenance of two water level recorders installed on wells constructed during the 1972 drilling program, occasional water well sampling, well location work by summer staff and collection of drill log data on a continuing once per year basis.

The objectives of this presentation are as follows:

(1) to compile and summarize all hydrogeological and hydrochemical data obtained to date for presentation into a format for future reference;

(2) to examine all groundwater information available and make quantitative estimates on groundwater usage versus groundwater in storage for each groundwater region; and

(3) review and discuss water quality and delineate problem areas.

A total of 850 records of wells drilled up to October 1977 have been reviewed. Of this total, 746 well records have been summarized and tabulated (Table 1). The remaining 106 records are of wells drilled during 1977 and these have not yet been accurately located in the field. Site descriptions given by drillers have, however, allowed the writer to roughly plot a large percentage of these wells on maps, thereby obtaining a reasonable idea where and at what rate groundwater development is taking place.

A map has been prepared showing Gabriola Island divided into 11 watershed regions (Figure 1). A detailed discussion on the hydrogeology of each region has been included in this report. A location map showing legal sections, and local place names has been prepared (Figure 2). A map has been prepared showing the basic characteristics of the bedrock geology of Gabriola Island (Figure 3). Maps have also been prepared showing well yields exceeding 10 gallons per minute as rated by the local drillers (Figure 4). Rating of the well yield is generally done by conducting a bail test on the well. Bailing time or number of bails removed is recorded in relation to total drawdown of water level. This method gives the driller a rough idea of the productive yield of each well. Maps showing wells sampled with chloride values exceeding

100 mg/L have been prepared (Figures 5, 6). A Schoeller plot has been prepared comparing the water quality in two observation wells (Figure 7). A plot of total dissolved solids versus total depth of well has been prepared to see if a depth-T.D.S. relationship exists (Figure 8). Maps have been prepared showing the location and lithology of the five observation wells (active and non-active) on Gabriola Island (Figures 9, 10), as well as water level plots for observation wells 72-1 and 72-4 (Figure 11). These observation wells have been discussed in detail in this report. Estimated groundwater usage versus available groundwater in storage has been calculated (Table 2) with relationships shown diagrammatically in Figure 12.

2. LOCATION, AREAL EXTENT AND CLIMATE

Gabriola Island is approximately 13,000 acres in size and is located east of Nanaimo. It is reached by a 20-minute scheduled ferry ride from Nanaimo and has a permanent population of around 1,150 people (Oswald, 1978). Visitors and part-time residents can increase this number to three times the permanent population during the summer months.

The island is characterized by a cool maritime climate with relatively warm, wet winters and cool, dry summers. The average annual precipitation over the last ten years has been determined as 34 inches (B.C. Ministry of Agriculture, 1977).

3. TOPOGRAPHY AND DRAINAGE

As the soil cover of Gabriola Island averages less than 6 feet, the topography generally reflects the underlying bedrock structure. The land surface is generally higher along the southwest coastal region and slopes in

a northeasterly direction. The highest elevation on Gabriola Island is slightly above 550 feet.

4. SURFICIAL DEPOSITS

The average depth of overburden on Gabriola Island is generally less than 6 feet. Surficial deposits of significant thickness or extent are practically nonexistent on Gabriola Island. The Island is generally free of glacial debris, except in some valleys where meltwater sediments have been deposited. Coarse gravel and boulder deposits reaching thicknesses up to 85 feet have been deposited near the southeast coast of the Island, west of Degnen Bay. Surficial deposits of any significant thickness appear limited to this specific area. A few shallow, moderately producing domestic wells have been completed in this material. Well log data has shown these gravel deposits to be generally dry and well-drained.

5. BEDROCK GEOLOGY

Gabriola Island is comprised of sedimentary rocks belonging to the Upper Cretaceous Nanaimo Group (Muller and Jeletzky, 1970). Erosion during and following the Pleistocene, coupled with constant weathering, have formed the present topography. The principal bedrock types of Gabriola Island are interbedded sandstones and interbedded shales and conglomerates.

6. BEDROCK STRATIGRAPHY

Four stratigraphic rock formations outcrop on Gabriola Island (Figure 3). Additional, more detailed stratigraphic discussions have been made by Muller and Jeletzky (1970). According to Muller and Jetelzky (1970), three of these

formations are predominantly interbedded sandstones and two are predominantly interbedded shales. These formations and their predominant lithology are listed below:

Formation	Predominant Lithology
Gabriola	sandstone
Spray	shale
Geoffrey	sandstone
Northumberland	shale

A very brief description on the lithology of each formation from Muller and Jeletzky (1970) is as follows:

6.1 Gabriola Formation

The Gabriola Formation is predominantly sandstone with some conglomerate lenses occurring locally. The lack of extensive conglomerate is a distinctive feature of this formation.

6.2 Spray Formation

The lower part of the Spray Formation consists largely of siltstone-shale sequences with thinly graded beds. Shale is more predominant in the upper part and individual shale beds are several feet thick, separated by thin bottom layers of siltstone.

6.3 Geoffrey Formation

The Geoffrey Formation is mainly composed of sandstone and coarse conglomerates. Cross bedding and shale breccias are exhibited in this formation and cavernous to honeycomb weathering features can be seen along the coastline.

6.4 Northumberland Formation

The upper part of the Northumberland Formation is comprised mainly of shales while the lower beds of the Northumberland are replaced by sandstone

and coarse conglomerate. This information can be seen exposed northeast of Northumberland Channel on the south coast of Gabriola Island. At False Narrows, between Mudge and Gabriola Islands shales are estimated to reach a thickness of 1,000 feet (Muller and Jeletsky, 1970).

7. WATERSHED REGIONS

Gabriola Island has been divided for convenience into 11 watershed regions (Figure 1). Boundaries between these regions generally represent the topographic divides between natural drainage basins. Watersheds were drawn from maps of 1" = 1,320' with contour intervals of 25 feet. They were subsequently reduced to the scale shown in Figure 1.

Maps showing preliminary groundwater regions have previously been prepared (Brown and Erdman, 1975) and are based principally on the results and subsequent conclusions derived during the 1972 drilling program by Robinson, Roberts and Brown. Although several groundwater regions have previously been defined by topography, bedrock lithology and fault and fracture systems on the Island, a more simplified division, a watershed region based primarily on topography, has been adopted for this report.

The largest watershed region is the Gabriola region (Figure 1) covering approximately 3,149 acres.

An estimate of the annual groundwater use in each region (Table 2) was made based on the number of wells in each region, utilizing a demand figure of 500 gallons per day for each well over a period of 100 days of little or no recharge. These figures were then compared to the probable groundwater available in storage for use on an annual basis over the same 100-day no recharge period. Under natural recharge conditions this quantity of water would be replenished annually from precipitation during the winter months. Potential recharge from precipitation (Foweraker, 1974) was calculated for Mayne Island on the basis of 1 inch per year. However, Foweraker found that his calculations exceeded by 2½ times the estimated storage available for groundwater within the

fractured bedrock media. This led him to believe that on an annual basis storage and permeability and not precipitation, appear as the more immediate limiting factors controlling groundwater availability on the Islands, particularly during the dry summer and fall periods.

Recharge to the groundwater regime from septic field disposal systems has not been accounted for in the recharge calculations of this report. Natural groundwater recharge generally takes place in topographically higher areas of the watersheds. Since most residential development is concentrated along coastal areas near the discharge end of the groundwater flow systems, groundwater recharge from septic fields is not considered to be a significant contribution regionally. Much of the septic effluent in coastal areas might be expected to discharge (seepage) into the sea, or be lost through evaporation and transpiration.

Storage coefficients of artesian bedrock aquifers may range from $1x10^{-5}$ to $1x10^{-3}$ (W.C. Walton, 1970). As reliable pump test data is lacking in most regions, difficulties arise in predicting changes in storage in relation to, and location of fault zones and density of bedrock fracturing. In view of this, a bulk storage coefficient of $1x10^{-4}$ (.01%) has been used in computing groundwater storage on Gabriola Island. This figure has previously been used for all computations of groundwater storage on Mayne Island (Foweraker, 1974). Application of this figure may not be feasible locally where detailed groundwater studies in a specific area have proven otherwise.

The method of estimating the demand-storage percentage of each region (Figure 12) was adapted from Foweraker (1974), but differs in that groundwater use is based on the number of wells rather than the number of residents using groundwater. Since one well may service more than one residence and not all wells may be used, the estimated demand-storage percentage figures may be somewhat high. Figures above 75% may therefore be considered critical. Following is an example of the calculations used in determination of the demand-storage percentage for the South Descanso Bay region.

Example:

(1) Area of region x total thickness of rock to bottom of potable water-bearing zone = Total volume of rock (acre-feet)

(339.20 acres) x (assume 200 feet) = (67,840 acre-feet)

(2) Total volume of rock x storage coefficient = Total potable groundwater in storage (acre-feet)

(67,840 acre-feet) x (0.0001) = (6.78 acre-feet)

(3) No. of wells in region x daily use per well x period of little or no recharge from precipitation = Estimated groundwater usage

(49 wells) x (500 gals./day) x (100 days) = (2,400,000 gallons)

(4) $\frac{\text{Estimated groundwater usage}}{\text{Total potable groundwater in storage in U.S. gallons}} \times 100$ = Demand-storage percentage

$$\frac{2,400,000}{6.78 \times 43,560 \times 7.481} \times 100 = \underline{108.6\%}$$

The demand-storage figures should be used with reservation as they are based on a simplified model which may be amended when more groundwater data becomes available. The figures do, however, identify problem areas where groundwater use may be exceeding natural recharge.

Following is a detailed discussion on the hydrogeological and hydrochemical information obtained within each watershed region.

7.1 Sands Region

Area - 864.2 acres

No. of drilled wells in region - 154

No. of dug wells and utilized springs in region - 21

The Sands Region is a highly developed, popular area with many wells located on lots varying in size between 0.5 and 1 acre along coastal areas.

The average depth of overburden overlying bedrock in this region is approximately 6 feet, while the average well depth and yield has been determined as 131 feet and less than 5 gallons per minute respectively.

The majority of drill logs on record in this region show layered sandstone and shale sequences. The principal water-bearing formation appears to be the contact zone between these sequences, with the shale layering being the major water-bearing material. Clay layering of varying thickness between bedrock zones is shown in numerous drill logs; however, this material is probably in reality a softer shale. Clay fault gauge may occur in some cases; however, thickness here would not be expected to be significant.

Well depths range from shallow dug wells (8 to 35 feet deep) to drilled depths of 418 feet.

Two good quality wells with high yield potential are reported in Section 21 and Section 22 (Figure 2). Both report excellent yields of between 25 and 30 gallons per minute, are relatively shallow, and are located considerably far inland. Greater yields have been reported from deeper wells in this region; however, hydrogen sulphide odour is apparent in these deeper wells.

Although the peninsula between Taylor and Pilot Bay (Figure 2) may be receiving some freshwater recharge from areas inland, water sampling has shown the potable groundwater in storage is intruded by sea water. The peninsula is a low-lying basin area and limited in catchment area, severely restricting potable groundwater recharge.

The probability of obtaining a good quality groundwater on the peninsula is very unlikely. Although some moderately yielding wells of 5 to less than 10 gallons per minute are located on the peninsula, Hach (field chemical) analyses have shown this area to be subject to sea water encroachment. Chloride values greater than 2,000 ppm (parts per million) have been recorded in some wells along the coastal fringe (Figure 6). All drilled wells on record located on the peninsula are completed below sea level. All wells sampled on the peninsula have shown evidence of sea water encroachment, and further groundwater development is not recommended.

The majority of wells located along Berry Point Road between Pilot Bay and Orlebar Point (Figure 2) report yields of less than 2 gallons per minute, although one recently drilled flowing artesian well (drilled July 1977) sited nearby a line of springs south of Clark Bay within the boundaries of Section 22 (Figure 2), has reported an excellent yield of 25 gpm (actual flow is not known) from 140 feet below ground level. Wells under artesian pressure in this area have recorded chloride values as high as 1,233 mg/L and T.D.S. values over 1,900 mg/L. This fact coupled with the spring activity may indicate the presence of a major fractured zone in the area.

From present knowledge, wells located inland and at higher elevations have shown water quality to be of a benign type. Chemical analysis has shown water quality to be a soft, moderately mineralized, type groundwater.

In summary, sea water encroachment is evident on both the peninsula between Taylor and Pilot Bay, and along the total coastline fringe bordering this groundwater region. It can be seen (Figure 6) that although saline water is restricted to wells completed below sea level around coastal areas,

salinity values do not necessarily increase with increasing depth. Salinity values would, however, be expected to increase with length and time of pumping and volume of water pumped. Sea water intrusion is evident in some wells inland from Taylor Bay, where rock fracturing may be directly linked with the ocean. Quality of well water in topographically higher areas inland should be of a benign type due to recharge from precipitation in these areas.

Demand-storage percentages have been calculated in Table 2 and shown diagrammatically in Figure 12. This figure shows groundwater usage to be over 150 percent. At present it would be unrealistic to assume a constant demand of 500 gallons per day is required of every well; however, if only one-half of the 175 wells recorded in this region were utilized at this rate, a demand-storage figure over 75 percent would still indicate a definite problem area.

7.2 Lock Bay Region

Area - 2,188.9 acres

No. of drilled wells in region - 197

No. of dug wells and springs utilized in region - 3

The average depth of overburden overlying bedrock is 10.5 feet and the average depth of drilled well determined as 75.5 feet. Well depths range from shallow dug wells to drilled depths of 325 feet.

Approximately 25 percent of this region is subdivided for present or future development. Most development exists along North Road inland at higher elevations and along coastal areas west of Lock Bay.

A good majority of wells drilled and recorded in this region are located west of Lock Bay (Figure 2) at elevations between 25 and 75 feet above sea level. The majority of these wells are less than 100 feet in depth and report excellent domestic yields greater than 10 gallons per minute (Figure 4).

The principal water-bearing formation along the coastal area west of Lock Bay is predominantly fractured and broken shale (Northumberland Shales). The fractured and broken nature of these shales and topography surrounding this area are favourable, resulting in numerous productive wells. Many wells in this area are situated on lots less than one-half acre in size and are located very close to the coastline. Wells in this area are closely spaced and mining or sea water intrusion could subsequently occur, particularly in the dry summer months when water demand is at its greatest. This particular area, west of Lock Bay, along the coast is being actively developed as approximately 20 new wells were constructed in this specific area in 1977.

The predominant water-bearing formation inland at higher elevations appears to be the contact zone between shale and sandstone sequences. The shale layering is probably broken and well-fractured and thus able to store and transmit groundwater in varying amounts. The sandstone appears to have no significant porosity or permeability and appears to be relatively massive.

Comparative yields inland to those along coastal regions are apparent. Domestic yields in these areas range from moderate to excellent; however, depths of wells inland are considerably greater in order to intercept groundwater movement through the fault and fracture zones.

Eight complete chemical analyses of groundwater quality are available showing water quality inland to be generally a soft, low to moderately

mineralized groundwater. Only two complete analyses are available from well water along coastal areas at lower elevation. Although no high chloride levels are apparent, mineralization is considerably greater. Sampling of selective wells along coastal areas at different times of the year may show evidence of sea water encroachment in these wells.

There is presently one active observation well (72-1) monitoring water levels within the boundaries of this region (Figure 9). Observation well 72-5, also within the boundaries of this region, was abandoned in August 1977. A detailed discussion on the construction and development of both wells and an attempt to analyse the hydrograph of Well 72-1 has been made and presented later in this report.

Demand-storage percentages have been calculated in Table 2 and shown diagrammatically in Figure 12. This figure shows groundwater use to be 70 percent of available groundwater in storage.

The low-lying coastal basin west of Lock Bay is very popular and has been and is continuing to be subjected to rapid growth.

7.3 Descanso Bay Region

Area - 1,420.9 acres

No. of drilled wells in region - 65

No. of dug wells and utilized springs in region - 5

The average depth of overburden overlying bedrock in this region is 5 feet, while well depths range from 8 feet to 537 feet (the deepest productive water well on record on Gabriola Island).

This region is at present not highly developed. The majority of wells are located inland on lots varying between 0.5 and 1 acre in size. The remaining wells are located along the coastline south of Taylor Bay and inland on larger parcels of land.

Well yields are reported as "poor" to as high as 40 U.S.gpm, while approximately 40 percent of the wells have been rated as capable of a potential of 10 gpm or greater. The majority of the wells rated 10 gpm and greater are located on a subdivision along the southern portion of the region. This subdivision is situated in a level valley area, about 300 feet above sea level and receives surface drainage from areas east and south of the subdivision.

In contrast, many wells located within S.E. Section 20 (Figure 2) are low to moderate yielding (less than 5 gpm).

Wells located south of Taylor Bay along the coastline have shown evidence of sea water encroachment with chloride values recorded as high as 550 parts per million.

Massive sandstone is the predominant bedrock type in this region (Gabriola Formation). The majority of drill logs show sandstone and thin shale layer sequences. Drill logs show both the sandstone and shale to be very capable of storing and transmitting groundwater. Conglomerate layering is evident in wells along the south coast and appears to be the principal water producer.

Four complete chemical analyses are on record from drilled wells in this region. This limited information shows groundwater from shallow wells,

less than 100 feet in depth and completed at elevations above sea level, to be a soft, low mineralized groundwater.

A discussion on the details of well construction and analyses of the hydrograph plot for Observation Well 72-3 has been presented later in this report.

The demand-storage figure has been calculated at 37.8 percent for this region. This figure suggests there is no present danger of demand exceeding groundwater in storage.

In summary, excellent domestic yields can be expected throughout the southern portion of this region. Many potential well yields exceeding 10 gpm have been recorded near this area. Excellent possibilities for constructing a high productive well field definitely exist in this region. The majority of productive wells are between 50 and 150 feet in depth at an elevation of between 250 and 300 feet above sea level. Water quality does appear to deteriorate with well depth. Groundwater does not appear to be restricted to the shale interbedding as in some regions and the sandstone appears to be capable of storing and transmitting groundwater to provide excellent productive yields from shallow depths.

7.4 Gabriola Region

Area - 3,148.9 acres

No. of drilled wells in region - 24

No. of dug wells and utilized springs in region - 1

The average depth of overburden overlying bedrock is 7.5 feet with well depths ranging between 12 and 275 feet.

Very little development has occurred in this region. Most wells are located on large tracts of land and are widely scattered.

The principal water-bearing material appears to be the contact zone between sandstone and shale sequences; however, many moderately productive wells have been reported to be drilled in the sandstone.

Well yields range between 0.6 U.S.gpm to 75 U.S.gpm (observation well 72-2 - the highest safe productive potential yield on record on Gabriola Island).

The few field chemical tests and complete analyses available show groundwater to be soft, low in mineralization in shallow wells inland, and soft, moderately high in mineralization from deeper wells at lower elevation. Water quality appears to deteriorate slightly with increased well depth.

Discussions on the details of well construction and development for observation wells 72-2 and 72-4 have been presented later in this report. An attempt to analyse the hydrograph plot (Figure 11) has also been made for observation well 72-4.

A calculated demand-storage figure of 5.8 percent (assuming saturated depth of 200 feet) indicates there is no present danger of groundwater withdrawal exceeding groundwater in storage.

In summary, a definite potential for drilling and developing good quality, high yielding production wells exists within this region.

7.5 Silva Bay Region

Area - 563.0 acres

No. of drilled wells in region - 48

No. of dug wells and utilized springs in region - 3

Most development in this region is centered around Silva Bay, north of Whitney Road on lots between 0.5 and 1 acre in size.

The average depth of overburden overlying bedrock is 3 feet with well depths ranging between 9 feet and 200 feet. Many excellent potential yields have been reported from wells less than 100 feet in depth.

Well yields range between 0.25 gallon per minute and 26 gallons per minute, with the majority of yields reported as 5 gallons per minute or less near coastal areas.

The principal water-bearing formation is sandstone (Gabriola Formation). Drill logs do not show the presence of fracture zones and it can only be assumed they are present where moderate to high yield potential wells are encountered. A few drill logs show shale layering between sandstone with this contact zone being the major producing zone.

A significant number of field chemical analyses have been performed on wells in the Silva Bay area. These analyses have shown definite evidence of sea water encroachment where chloride values as high as 1,050 ppm have been recorded from shallow drilled wells (Figure 5).

The majority of wells in the Silva Bay region are completed below sea level.

Chemical analysis has shown water quality inland to be basically soft, moderately mineralized groundwater with no evidence of sea water intrusion at present.

A demand-storage figure of 68.1 percent suggests serious consideration should be given to monitoring future groundwater development in the area surrounding Silva Bay. Sea water encroachment is already a problem along coastal areas. There is potential for construction of moderate to high yielding wells inland in this region. Well depths between 100 and 150 feet should result in yielding good quality groundwater.

7.6 North Degnen Bay Region

Area - 553.2 acres

No. of drilled wells in region - 30

No. of dug wells and utilized springs in region - 2

Most development in this region is centered around Degnen Bay.

The average depth of overburden overlying bedrock is 3 feet with well depths ranging from 8 feet to 202 feet. Most drilled wells around Degnen Bay are completed below sea level. Very few water quality analyses are presently available for this region. One well located in the east Degnen Bay area has, however, a reported chloride value of "greater than" 1,000 ppm, which may suggest the possibility of sea water encroachment in some wells along the coastline.

Excellent domestic yields have been reported along the Degnen Bay coastline; however, water quality may not be acceptable because of high chloride levels recorded in some wells in this area. Some moderately yielding wells completed near the coastline at elevations

below sea level have shown evidence of possible sea water intrusion. Many wells sampled reported chloride values exceeding 100 mg/L.

A demand-storage figure of 44.4 percent indicates no immediate danger of groundwater withdrawal exceeding natural recharge. Careful planning should be given to future groundwater development along coastal regions where sea water contamination could become a serious problem as is apparent in other more developed coastal areas.

7.7 West Degnen Bay Region

Area - 422.5 acres

No. of drilled wells in region - 16

No. of dug wells and utilized springs in region - 3

Almost all groundwater development in this region surrounds the Degnen Bay coastline.

The average depth of overburden is 12 feet with surficial deposits (blue clay) as thick as 40 feet recorded near the west bay area. A few dug wells in this area are completed in creek beds and report good domestic yields.

Well depths range between 4 feet and 231 feet with yields ranging between 0.5 gpm and 25 gpm.

The principal water-bearing formation appears to be the contact zone between shale and sandstone sequences. Some thick formations of water-bearing shale can be seen inland from the Degnen Bay coastline (Spray shales).

Water quality analyses taken on wells west of Degnen Bay near the coastline have shown evidence of sea water encroachment (Figure 5).

The demand-storage figure of 34.5 percent indicates no immediate danger of groundwater withdrawal exceeding natural recharge. Once again, the dangers of future groundwater development on small coastal lots should be of concern where overpumping the bedrock fractures may eventually deteriorate water quality, especially during the dry summer months.

7.8 False Narrows Region

Area - 1,414.2 acres

No. of drilled wells in region - 165

No. of dug wells and utilized springs in region - 13

The False Narrows Region is extensive, covering the southeastern coast of Gabriola Island and is highly developed along coastal areas. Over 500 acres of this region are subdivided for present or future development. Much of this acreage is subdivided into lots 1 acre or less in size.

The average depth of overburden overlying bedrock is 10 feet with well depths ranging between 5 and 250 feet (this range does not include a coal exploration hole drilled during the 1930's to a depth of 2,200 feet).

The principal water-bearing formation appears to be fractured shale (Northumberland Formation). These shale beds appear to be have been subjected to shear stress caused by folding and are consequently highly fractured. Sandstone appears capable of producing moderate domestic yields in the eastern portion of the region around the mouth of Degnen Bay.

Thick formations of clay overlying shale are common along the coastline with some surficial deposits (boulders, coarse gravel) as thick as 85 feet recorded inland within the Garland subdivision. These deposits, however,

generally have little water-bearing potential. One well completed in coarse gravel is reported to yield 10 gpm. The majority of drilled wells in the Garland subdivision are completed in fractured shales and produce moderate domestic yields (5 gpm and less).

Considerable groundwater development is apparent along the coastline west of Degnen Bay. This is a high well density area with yields reported from "poor" to 20 gpm. The majority of wells are completed at elevations below sea level, and are located on lots less than 1 acre in size.

Excellent yields have been reported inland at higher elevations and the Percy Anchorage area (Figure 2) near the 2,200-foot coal exploration hole drilled in the 1930's. Four wells were drilled in late 1971 to a depth of 100 feet and all penetrate fractured water-bearing shale beds. This well field is located in a meadow area (elevation 25 feet above sea level).

Three of the four wells were pump tested. The fourth well was not considered worthwhile to test as the driller bailed this well dry at 12 gpm. Very little water quality data is available in this region. A few chemical analyses of groundwater are available from areas inland and along coastal areas near Percy Anchorage. These analyses have shown groundwater to be low in hardness, moderately to rather highly mineralized. The only sign of sea water encroachment is in a well adjacent to the Percy Anchorage coastline. The higher levels of chloride (200-480 ppm) suggest that this well is drawing water from a deeper zone than is used by the adjacent wells in the same shale formation.

Sea water intrusion is evident at the mouth of Degnen Bay along the western coastline fringe where chloride values from wells have been recorded

as high as 3,050 ppm and T.D.S. values as high as 8,000 ppm.

A demand-storage figure of 96.6 percent has been calculated. Once again, this figure may be relatively high assuming 500 gpd is required of every well recorded in the region. As stated previously, however, the relative value of this figure is considered to be valid and does serve to point out problem areas.

In summary, this region is highly developed, particularly along the coastline. Although little evidence of well interference and sea water encroachment is presently available, well density in this area suggests this could be a definite problem.

This region has proven potential for construction of a moderate to highly productive well field. Production wells should, however, be sited at higher elevations inland as far as is practical away from low-lying coastal areas.

7.9 Hoggan Lake Region

Area - 1,977.7 acres

No. of drilled wells in region - 20

No. of dug wells and utilized springs in region - 2

Most development exists within the Wildwood Estates subdivisions in the northwestern portion of the region. The average depth of overburden overlying bedrock is 4.5 feet with wells ranging in depth between 60 and 245 feet. Reported well yields range from 10 gallons per hour to 50 gallons per minute.

Both the sandstone and shale appear capable of yielding moderate to high quantities of groundwater. Sandstone and shale layering is common in this region, and drill logs indicate the contact zone between shale and sandstone may be a major producing zone. Excellent yields have been reported within the Wildwood Estates property. Yields as high as 50 gpm from relatively shallow depth wells (130-140 feet) are on record. Drill logs show bedrock to be highly fractured with excellent water-bearing potential. Topography in the area is favourable, promoting surface and subsurface groundwater movement.

Chemical analyses shows groundwater in this area to be generally soft and moderately mineralized.

Very little groundwater data is presently available in other portions of this region.

Hoggan Lake was formed by the construction of a dam in the early 1900's that backed water into a previous wetland. The lake which is about 40 feet deep and covers approximately 59 acres may have potential as a major water supply for the southwest corner of Gabriola Island. It is, however, situated on privately owned property.

In summary, excellent potential for groundwater development exists in the northwestern portion of this region. No groundwater data is presently available at higher elevations surrounding the Wildwood Estates subdivisions.

7.10 Northumberland Channel Region

Area - 204.9 acres

No. of drilled wells in region - 2

No. of dug wells and utilized springs in region - -

The Northumberland Channel Region covers a narrow strip of land along the southwestern coast of the Island. Some development exists along the western portion of the region; however, the eastern portion is bounded by steep cliffs with little potential for development. Almost no information is available on groundwater quantity or quality in this region.

7.11 South Descanso Bay Region

Area - 339.2 acres

No. of drilled wells in region - 47

No. of dug wells and utilized springs in region - 2

The South Descanso Region has been heavily subdivided and is almost totally divided into lots one acre and less in size. The average depth of overburden overlying bedrock is 5.5 feet with well depths ranging between 12 feet and 300 feet.

Sandstone and shale sequences are common inland in this region while sandstone and conglomerate layering is common along coastal regions, particularly in the Descanso Bay area. Drill logs indicate the contact zone between these sequences is the major water-producing zone. Yields in this region are reported to range from "poor supply" to 32 gpm.

In the past, a well field was designed and constructed to provide domestic water to future residents in the South Descanso Region. This particular area is located in a low-lying meadow area but insuffient water was obtained to meet the requirements of the development of that time.

Numerous domestic wells have since been drilled on private lots to the east of the meadow area at higher elevations with varying results. Most wells

reporting good domestic yields are shallow, generally less than 100 feet in depth, while deeper wells have not shown significant increases in potential yields. Pumping levels of many of the wells inland are above sea level.

Wells located around Descanso Bay are subject to sea water intrusion. Most of these wells are completed below sea level and once the fresh water head is lowered through pumping, sea water may enter the water-bearing zone. Chloride values as high as 250 ppm have been recorded in the Descanso Bay area.

At present the number of wells on record as theoretically extracting 500 gallons per day has indicated groundwater withdrawals are exceeding groundwater in storage. A demand-storage percentage of 108.6 percent has been calculated for the region. This particular region has been substantially subdivided in the past and if domestic wells were constructed on each lot excessive groundwater withdrawals could present a real problem, particularly in the dry summer period when water levels are at or near their lowest. Some potentially high yielding wells have been constructed to the east of this subdivision.

8. GROUNDWATER QUALITY

Natural groundwater quality is emphasized in this report and pollution aspects apart from natural sources such as sea water, for example, have not been analyzed.

Approximately 75 complete chemical analyses of groundwater have been done on Gabriola Island, as well as numerous field (Hach) analyses.

These analyses have shown groundwater on Gabriola Island to be basically a good quality, soft, low to moderately mineralized water in areas of higher elevation, while higher mineralized groundwater is apparent at lower elevations. This is particularly evident along coastal regions where wells are subject to sea water encroachment. The majority of wells sampled for complete chemical analyses are less than 200 feet in depth.

A computer plot has shown a correlation coefficient of around 0.6 between Total Dissolved Solids and total depth of well (Figure 8). This figure would indicate a relationship between T.D.S. and depth does exist; however, this is not overly evident. A more apparent T.D.S.-depth relationship would probably be evident if similar depth wells were located in topographically similar areas.

9. OBSERVATION WELLS

At present there are three observation wells on Gabriola Island (Figure 9) that are being actively monitored, either manually by an observer or with automatic water level chart recorders.

Five test wells were originally drilled during the 1972 drilling program and four of the five wells have been monitored for at least part of the time during the period 1973-78. Observation well 72-2 has never been monitored due mainly because of a flowing artesian condition (water level + 10 feet above ground level at time of well completion), necessitating the capping of this well.

A brief discussion on the current status of the Gabriola Island observation wells has been presented below. Wherever length and consistency of record has permitted, an attempt has been made to try and correlate water

level fluctuation with periods of high and low precipitation and/or pumping in the area.

9.1 Observation Well 72-1

Description: Section 14, Well No. 3
Depth 325 feet
Site I.D. 1400064

This well is located in the Lock Bay region and was drilled in 1972 by the air rotary method. It was pump tested for 1,000 minutes.

Based upon the results of this pump test, the safe productive yield was rated at 10 U.S.gpm. It is located inland in N.E. section 14 at an elevation of 325 feet above sea level (Figure 9).

Interpretation of this water level hydrograph is difficult in that measurements are taken on a once per month basis and also water levels may be influenced from nearby pumping.

Peak water levels do, however, correspond to periods of high precipitation, although response is slow, with a time lag of about one month (Figure 11). This slow response to precipitation may indicate that the well is not responding to a local flow system, but rather to a deeper flow system. Water Quality shows a moderately mineralized calcium bicarbonate type groundwater deeper flow system; however, more extensive sampling would have to be done before this can be confirmed. The major water-bearing formation intercepted is 215 feet below ground level.

It is recommended that an automatic water level recorder be installed on this well, as past experience has shown that manual readings can be misleading taken on a once per month basis on a well suspected of being influenced from nearby pumping.

9.2 Observation Well 72-2

Description: Section 6, Well No. 5
Depth 275 feet
Site I.D. 1400060

Observation well 72-2 is located in the eastern end of the Island along Peterson Road at an elevation of 120 feet above sea level (Figure 9). The well was drilled in 1972 by the air rotary method and pumped at a rate of 70 U.S.gpm for 1,400 minutes. Based upon available data, the well was rated at 75 U.S.gpm.

An artesian flowing condition (calculated head at time of well completion was 10 feet above ground level) necessitated capping of this well.

9.3 Observation Well 72-3

Description: Section 19, Well No. 7
Depth 250 feet
Site I.D. 1400067

Observation well 72-3 is located in the Ministry of Highways yard off North Road at an elevation of 305 feet above sea level (Figure 9). The well was drilled in 1972 by the air rotary method and was pumped at 50 U.S.gpm for 1,500 minutes. The safe productive yield of this well was calculated at between 35 and 40 U.S.gpm.

The well is equipped with an automatic water level recorder and has been continually monitored since 1973.

Analyses of the water level data has shown that although annual seasonal fluctuation can readily be seen, water level is definitely being influenced from nearby pumping. The Gabriola school well, located approximately 600 feet east, is most probably the influencing well. Similar water levels in both

wells further supports this assumption. The water level data has also shown that there is no evidence of any overpumping of this aquifer at this time.

9.4 Observation Well 72-4

Description: Section 16, Well No. 1
Depth 275 feet
Site I.D. 1400061

Observation well 72-4 is located near the middle of the Gabriola region along North Road at an elevation of 210 feet above sea level (Figure 9). The well was drilled in 1972 by the air rotary method and no pump test was conducted. At the time of drilling the well yield was estimated to be 3 U.S.gpm. Attempts to improve the yield by surging were not successful.

All available manual water level data collected to date has been presented in this report (Figure 11). An automatic water level recorder was installed on this well in August 1977.

The hydrograph (Figure 10) shows water level does correspond with precipitation; however, peak water levels lag behind peak periods of precipitation by about one month.

The water level has continued to rise in this well since initially drilled in 1972. The low point in the hydrograph record was reached at about 31.5 feet in October 1973. A definite pattern of rising water level can readily be seen with the low point in October 1977 recorded as 21.7 feet below ground level.

Both observation wells (72-2 and 72-4) have been sampled for complete chemical analysis. Although the water quality of well 72-2 shows a more alkaline, higher mineralized water than well 72-4, a Schoeller plot has shown both groundwaters to be of a similar type (Figure 7), and possibly within the

same flow system. The sample showing higher parameter values (seen in observation well 72-2) would be expected to be located in the lower end of the flow system. The topographic location and flowing artesian condition seen in 72-2 tends to support this assumption. The higher yield and flowing artesian condition and more rapid movement of the groundwater through the fracture system may account for the lower mineralized groundwater found in well 72-4.

9.5 Observation Well 72-5 (Figure 9)

Description: Section 22, Well No. 44
Depth 325 feet
Site I.D. 1400063

Observation well 72-5, also within the boundaries of this region, was abandoned in August 1977. The well was drilled in 1972 by the air rotary method and was pumped for 1,500 minutes. The safe productive yield was calculated at 20 U.S.gpm.

The well was equipped with an automatic water level recorder from June 1973 to August 1977.

10. CONCLUSIONS

(a) Groundwater inland on Gabriola Island is generally of a benign type, being a relatively soft, moderately mineralized type groundwater. Total Dissolved Solids in wells sampled inland is generally below 250 mg/L. Higher mineralized water is evident along coastal regions where T.D.S. values are as high as 5,800 mg/L. This particular sample was taken from a well located on the western coastline fringe of Degnen Bay. This highly mineralized water is usually associated with sea water intrusion. A combination of continuing development, lack of summer recharge and

nature of the local bedrock has contributed to deterioration of water quality in some areas. Areas where sea water encroachment is apparent are Silva Bay, Degnen Bay, east of Lock Bay, and particularly the Pilot-Taylor Bay area.

(b) Approximately 10 to 15 percent of drilled wells on Gabriola Island have been reported by the well drillers to be capable of yielding over 10 gallons per minute.

(c) Approximately 85 percent of groundwater utilized on Gabriola Island is from drilled wells with the principal aquifer reported as fractured shales and sandstones.

(d) Bedrock wells range in depth from 5-foot dug wells to 537-foot drilled wells.

(e) Well yields range from 1 gallon per hour to 75 U.S. gallons per minute.

(f) A relationship showing increasing mineralization with increasing well depth appears to exist up to depths of around 200 feet (Figure 8). Further investigations may show a T.D.S. depth relationship is even more evident in deeper wells.

(g) Successful well fields have been developed to supply water to subdivisions on the Island. Specific well sites have shown potential for greater groundwater development, while some areas have shown potential for developing higher capacity well yields. These areas are, however, limited and in some cases quite far from the more populated coastal regions.

(h) Demand-storage percentages have been calculated for each groundwater region. On the basis of 500 gpd per well, those regions considered to be at present critical are the Sands, False Narrows and South Descanso Bay regions. Those regions that are becoming critical as groundwater development continues are the Lock Bay and Silva Bay regions. The remaining regions appear to have adequate groundwater in storage to meet additional water demands.

11. RECOMMENDATIONS

(1) Further groundwater development along the coastal areas of the Sands, Lock Bay, South Descanso Bay, False Narrows, Degnen Bays and Silva Bay regions should be carefully planned. Further deterioration of the groundwater resource may occur in these areas due to sea water encroachment or well interference problems.

(2) Additional potential for development of the groundwater resource exists within the Hoggan Lake, Descanso Bay and Gabriola regions, and inland in the Lock Bay, Degnen Bays and Silva Bay regions.

(3) Additional investigations are warranted to determine with more certainty the productivity of the fault and fracture systems on Gabriola Island, and the role of major fault zones on groundwater movement on the island.

(4) Some additional programs which should be considered are:

(i) A water quality program should be initiated on Gabriola Island, particularly along coastal regions to obtain more up-to-date

information on groundwater quality. Very little information is presently available on water quality from wells drilled during the past few years.

(ii) Well 72-2 should be monitored on a regular basis. The location and importance of this high yielding aquifer (the productive yield of this well was determined as 75 U.S.gpm) warrants monitoring of the shut-in pressure head at least once per month. (The artesian head at time of well construction was estimated to be 10 feet above ground.)

(iii) A pump test should be conducted on observation well 72-4 (Weldwood of Canada) in the near future; water level in this well has continued to rise since initially drilled in 1972.

12. REFERENCES

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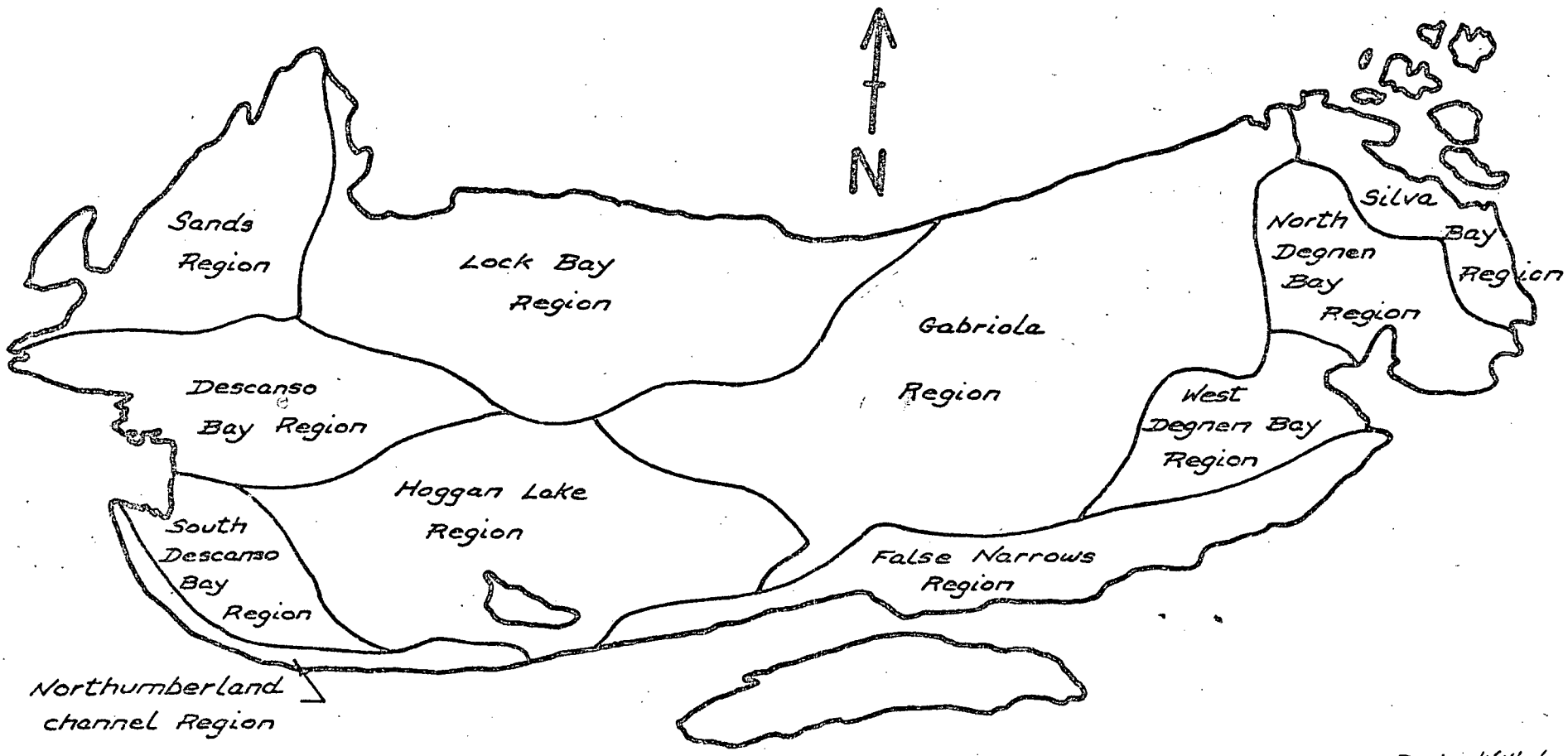
Ministry of the Environment



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LEGEND

Watershed Region name and Boundary.

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WATER INVESTIGATIONS BRANCH

TO ACCOMPANY REPORT ON

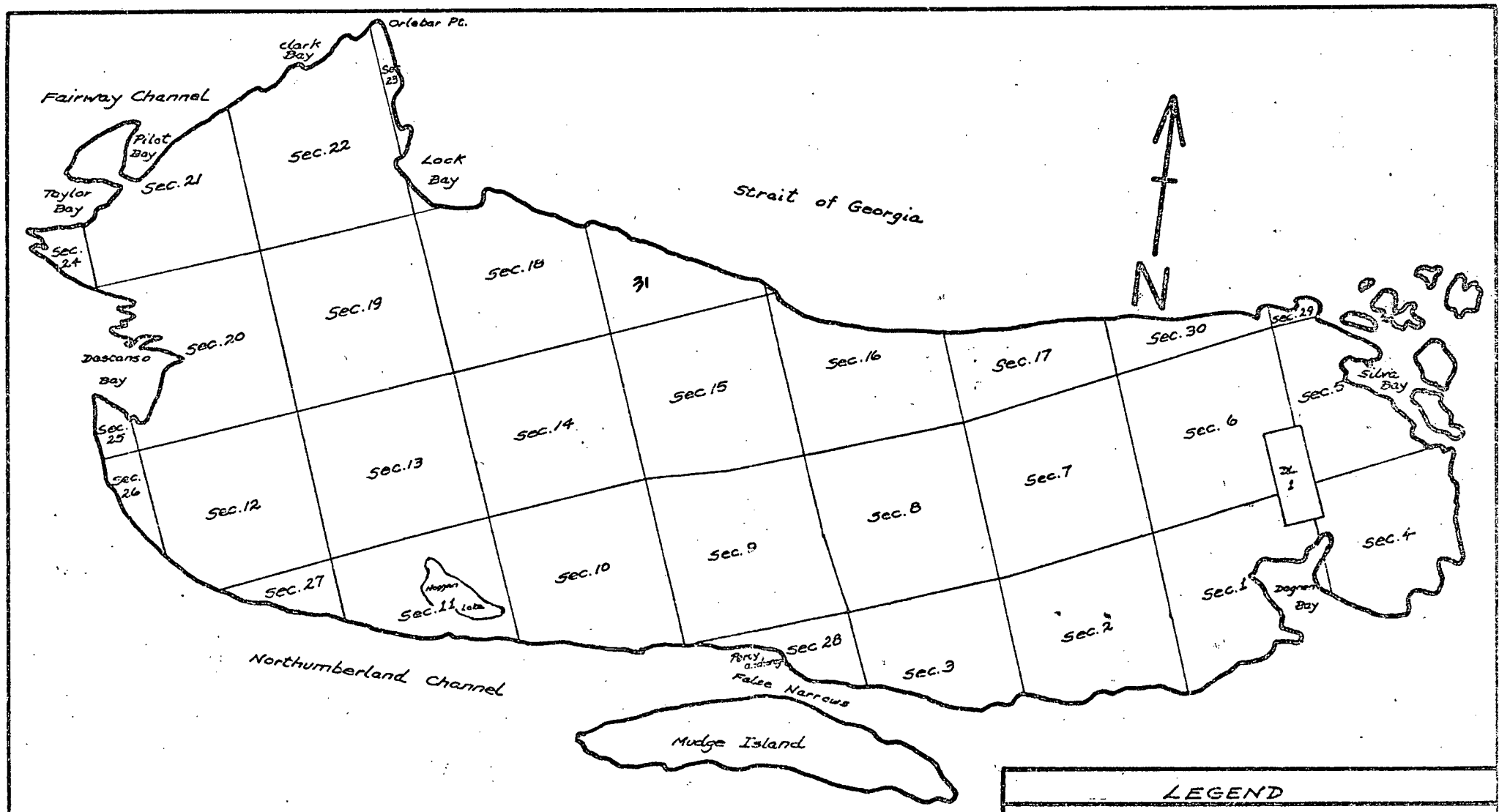
Gabriola Island - Watershed Region Map.

SCALE: VERT. As shown
HOR. As shown

DATE Aug. 1973

ENGINEER

FILE No. DWG. No. Figure 1



LEGEND

Sec 9 – Legal Section

BRITISH COLUMBIA
MINISTRY OF THE ENVIRONMENT
ENVIRONMENTAL AND ENGINEERING SERVICES
WATER INVESTIGATIONS BRANCH

TO ACCOMPANY REPORT ON

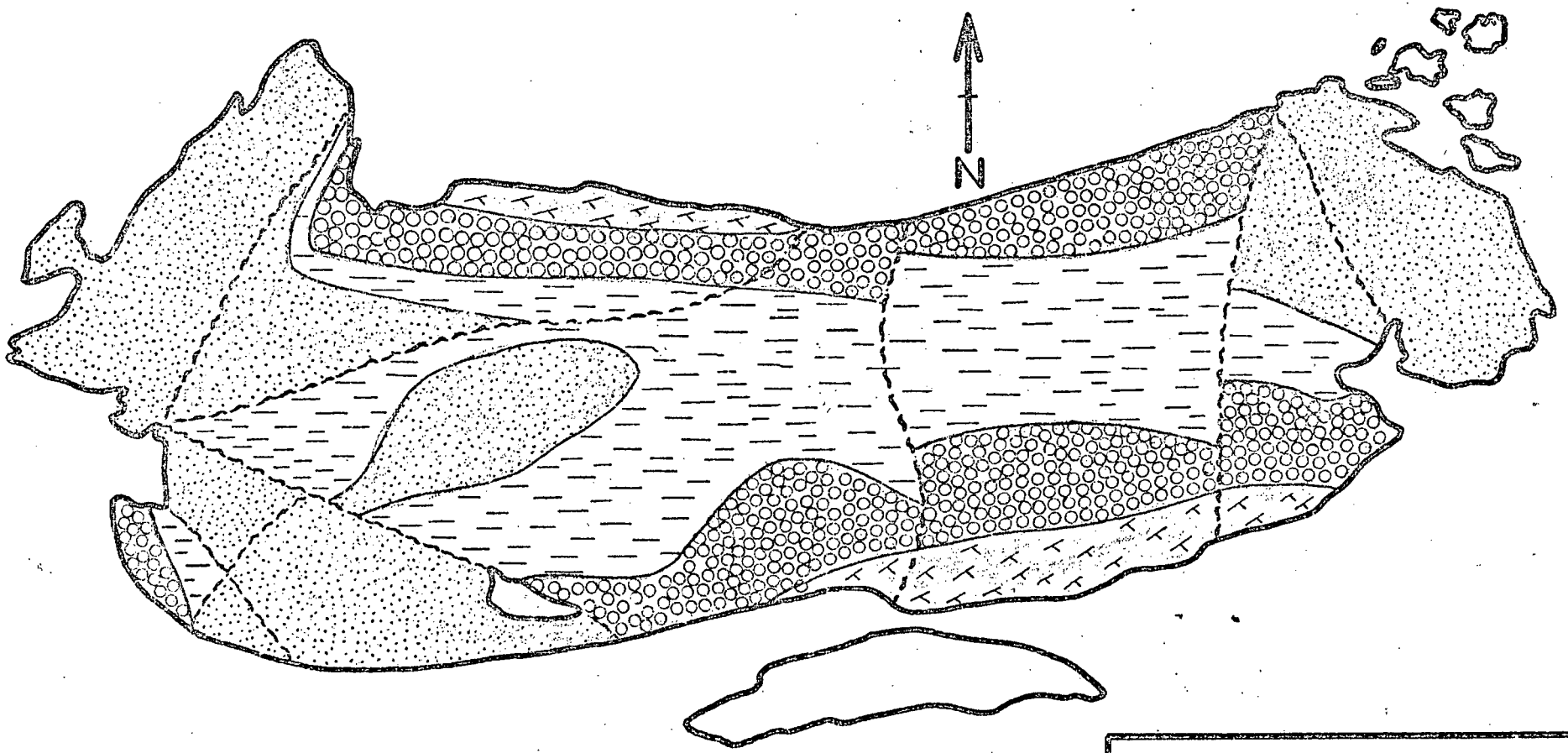
Gabriola Island –
Legal Location Map

SCALE: VERT. As shown
HOR. As shown

DATE
Aug. 1978

ENGINEER

FILE No. DWG. No. Figure 2



0 3000 6000 9000 ft.

1972- Geology adapted from W.L. Brown with reference to J.E. Muller and J.A. Jeletzky (1970) G.S.C. paper 69-25.

LEGEND

- fault or fracture zone
- Spray Shales
- Gabriola Sandstone
- Geoffrey Conglomerate
- Northumberland Shale

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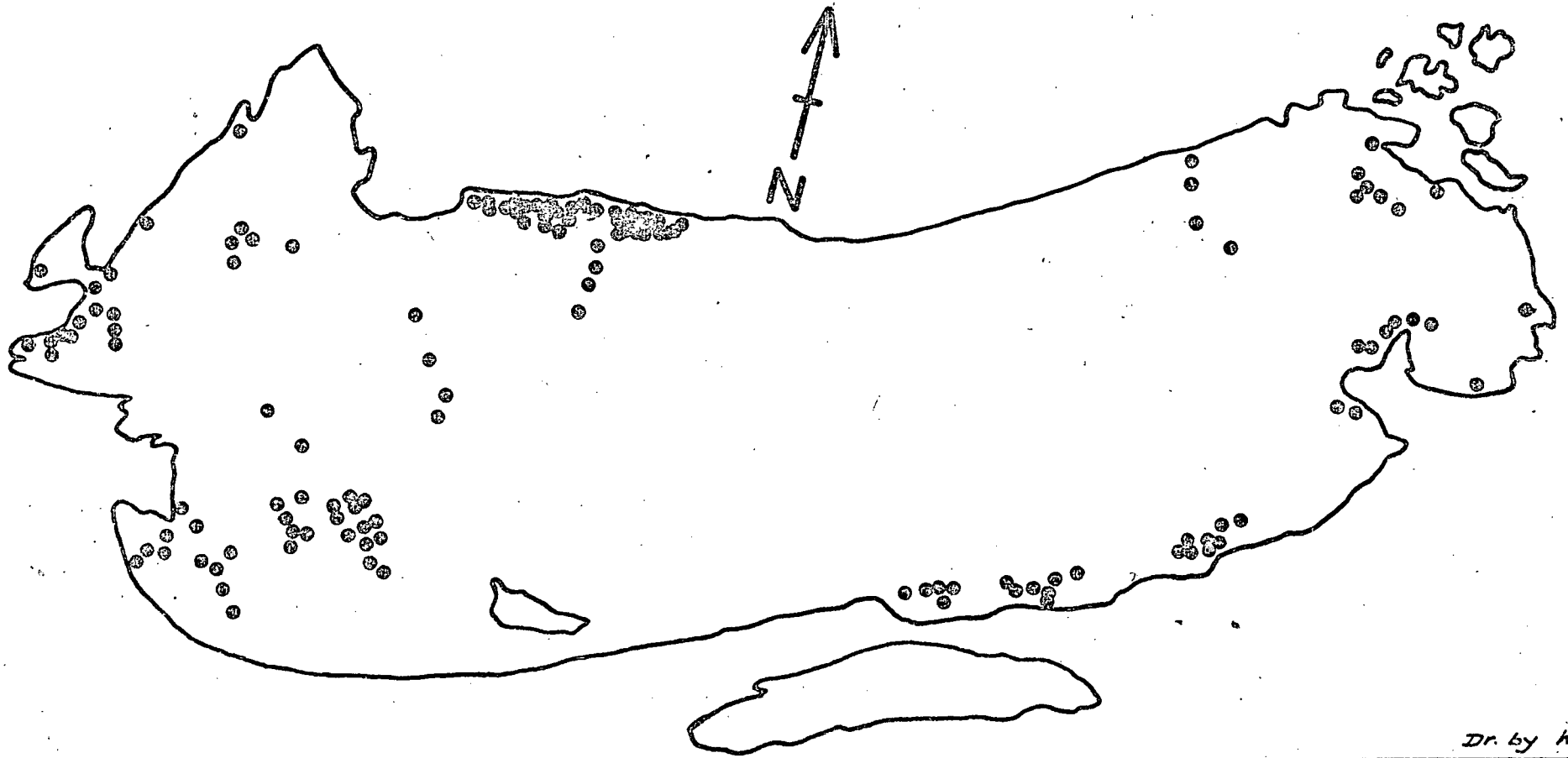
Gabriola Island - Bedrock and Structural Geology Map.

SCALE: VERT. As shown
HOR. As shown

DATE Aug. 1978

ENGINEER

FILE No. DWG. No. Figure 3



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LEGEND

● Wells capable of yielding greater than 10 g.p.m. (reported by driller)

Note:
Well location is approximate.

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Gabriola Island –
Map showing Well Yields
greater than 10 g.p.m

SCALE: VERT. As shown
HOR. As shown

DATE
Aug. 1978

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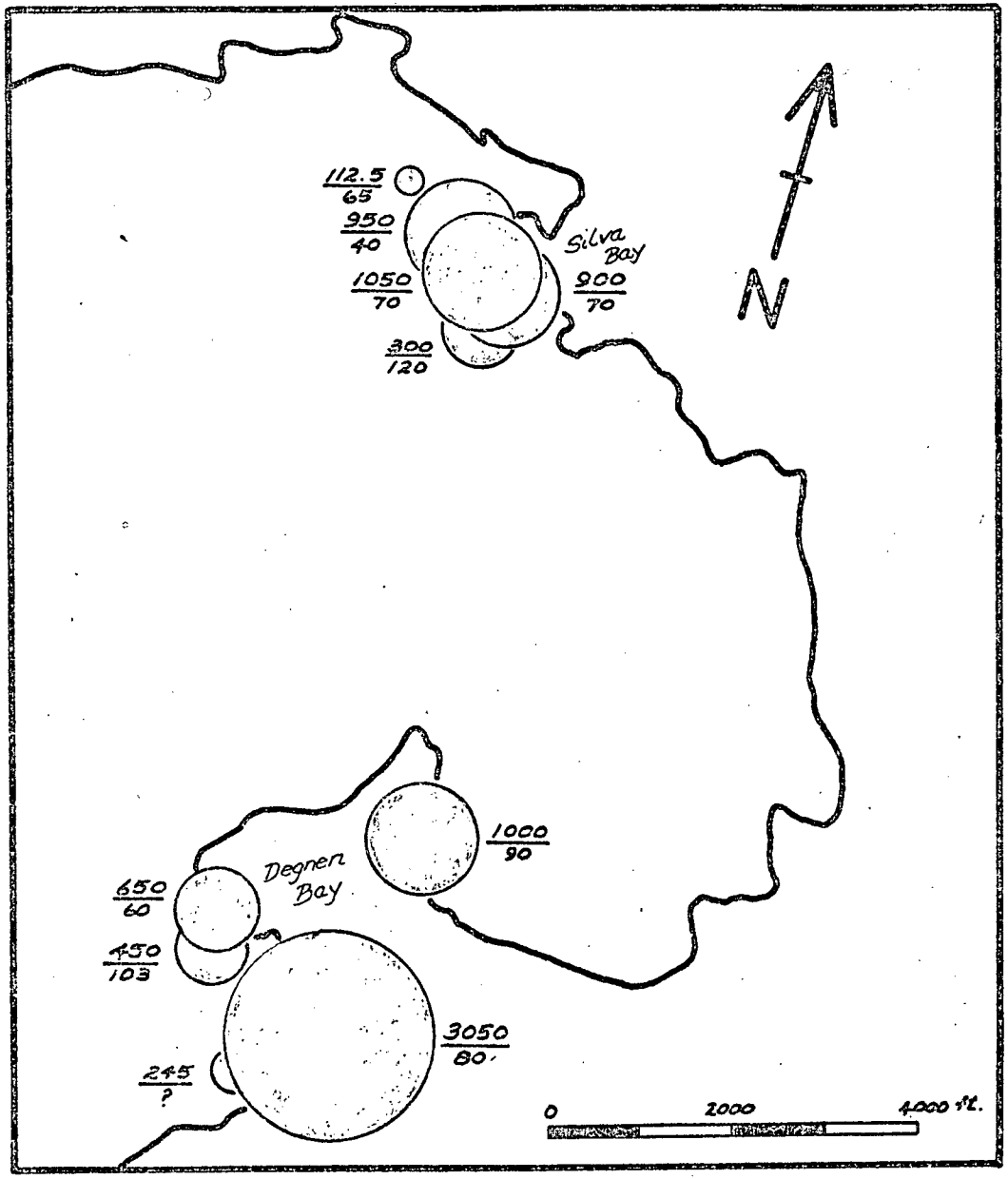
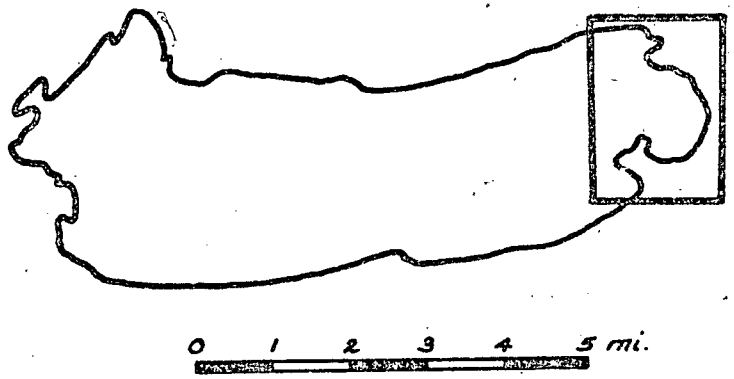
FILE No. DWG. No. Figure 4





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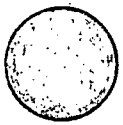
LEGEND



800 ← Chloride value in Mg./L.
75 ← Well depth

Wells with known chloride values greater than 100 mg./L
* Circle size is proportionate to chloride value of sampled well.

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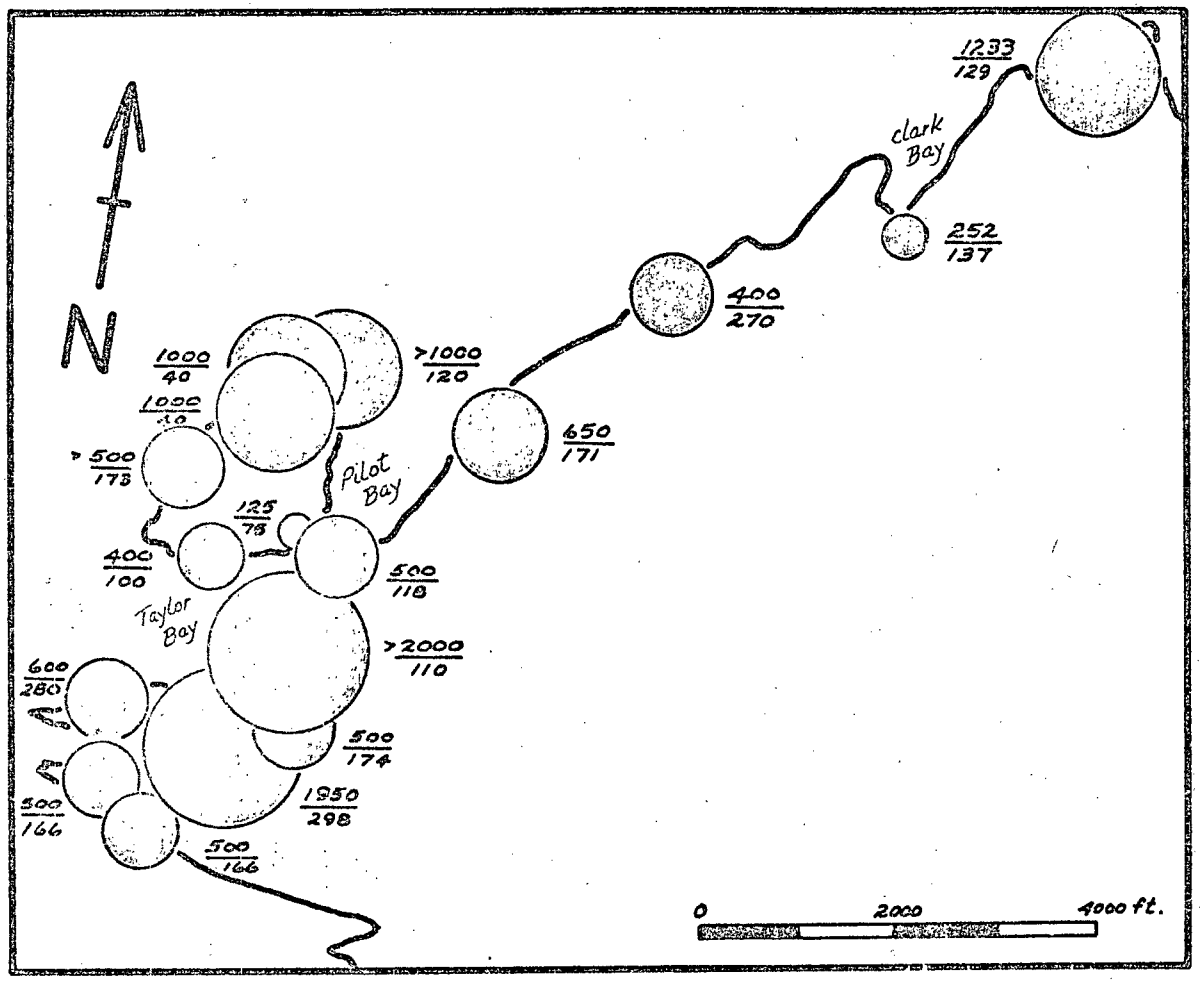
TO ACCOMPANY REPORT ON
Gabriola Island -
Map showing chlorides exceeding 100 Mg./L.

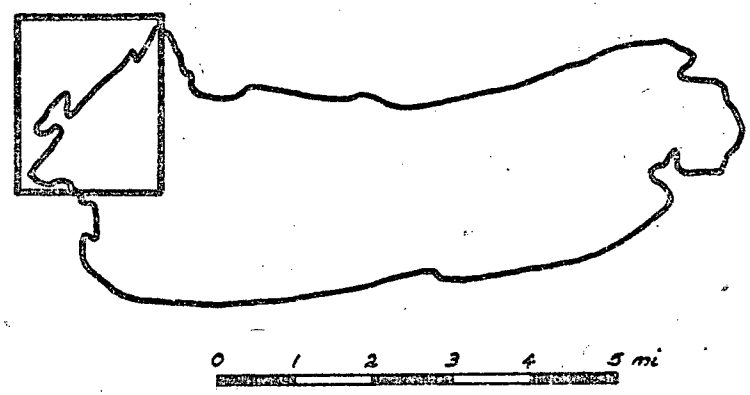
SCALE: VERT. As shown
HOR. As shown

DATE
Aug. 1978

ENGINEER

FILE No. ..... DWG. No. Figure 5





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LEGEND

500/120 — chloride value in Mg./L. / Well depth

Wells with known chlorides values greater than 100 mg/L
* circle size is proportionate to chloride value of sampled well.

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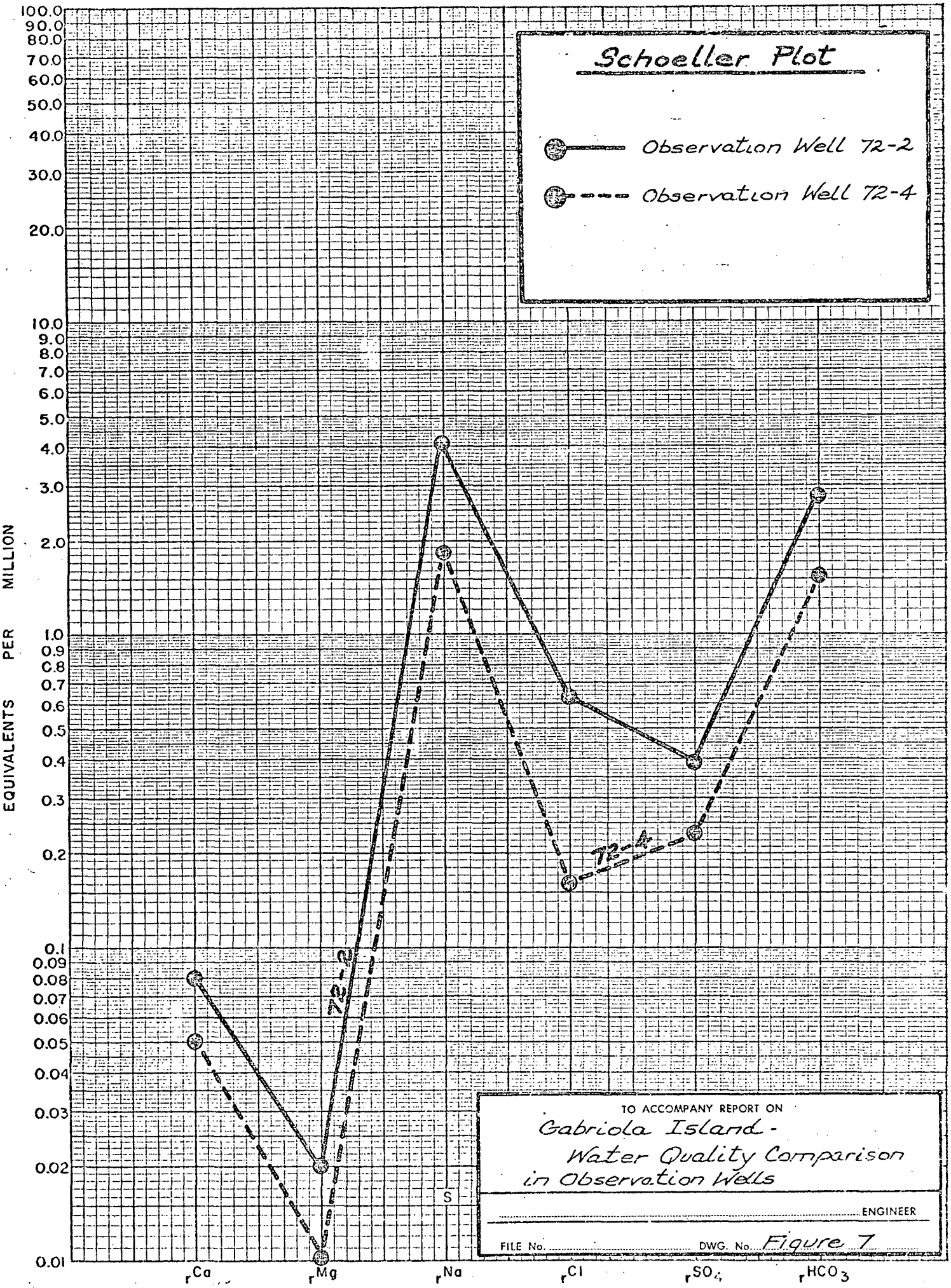
Gabriola Island -
Map showing chlorides exceeding 100 Mg./L.

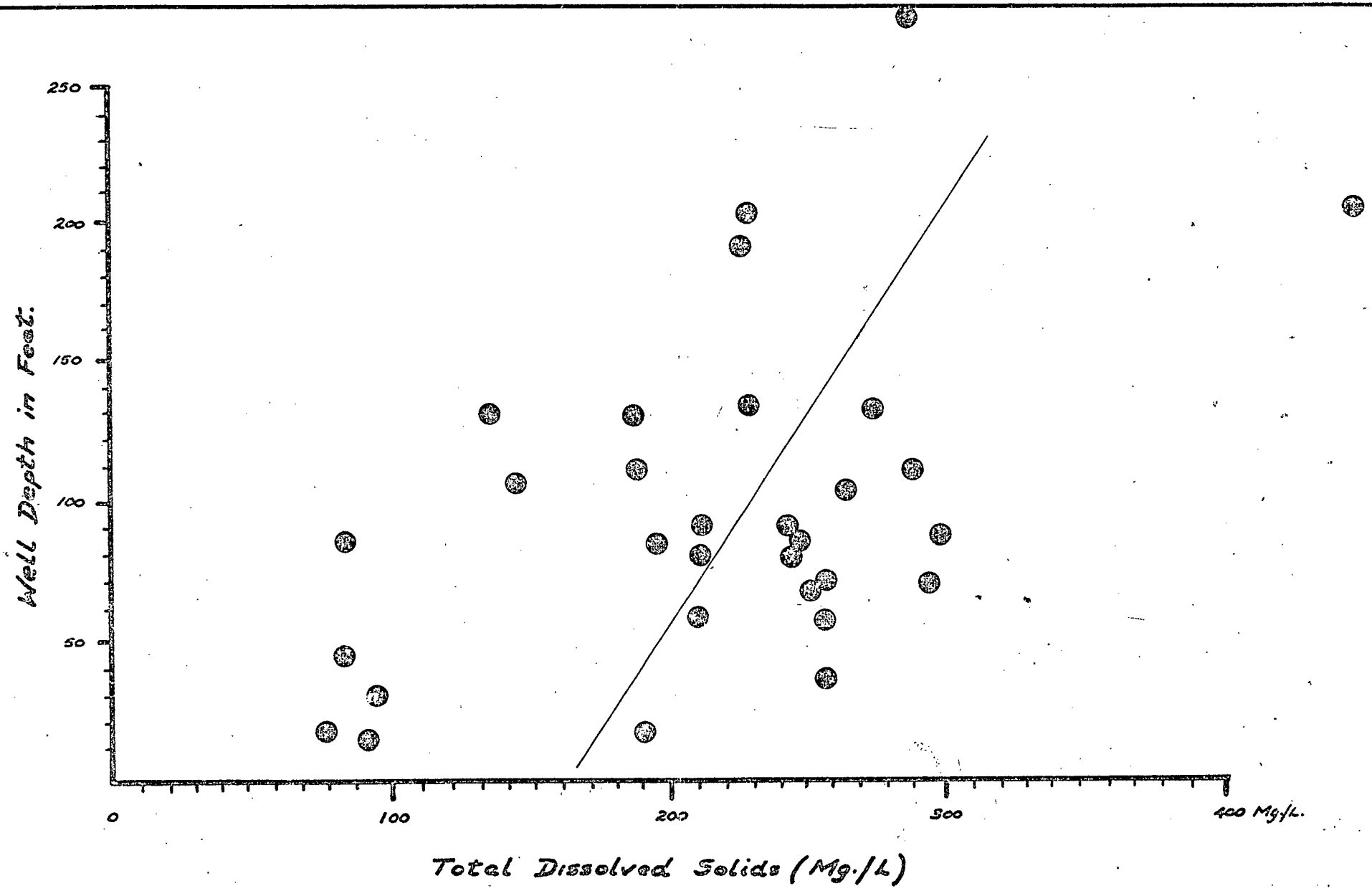
SCALE: VERT. As shown
HOR. As shown

DATE
Aug. 1978

ENGINEER

FILE No. DWG. No. Figure 6


Schoeller Plot
Observation Well 72-2
Observation Well 72-4
EQUIVALENTS PER MILLION
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
72-2
72-4
rCa
rMg
rNa
rCl
rSO4
rHCO3
TO ACCOMPANY REPORT ON
Gabriola Island -
Water Quality Comparison
in Observation Wells
ENGINEER
FILE No.
DWG. No. Figure 7



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TO ACCOMPANY REPORT ON

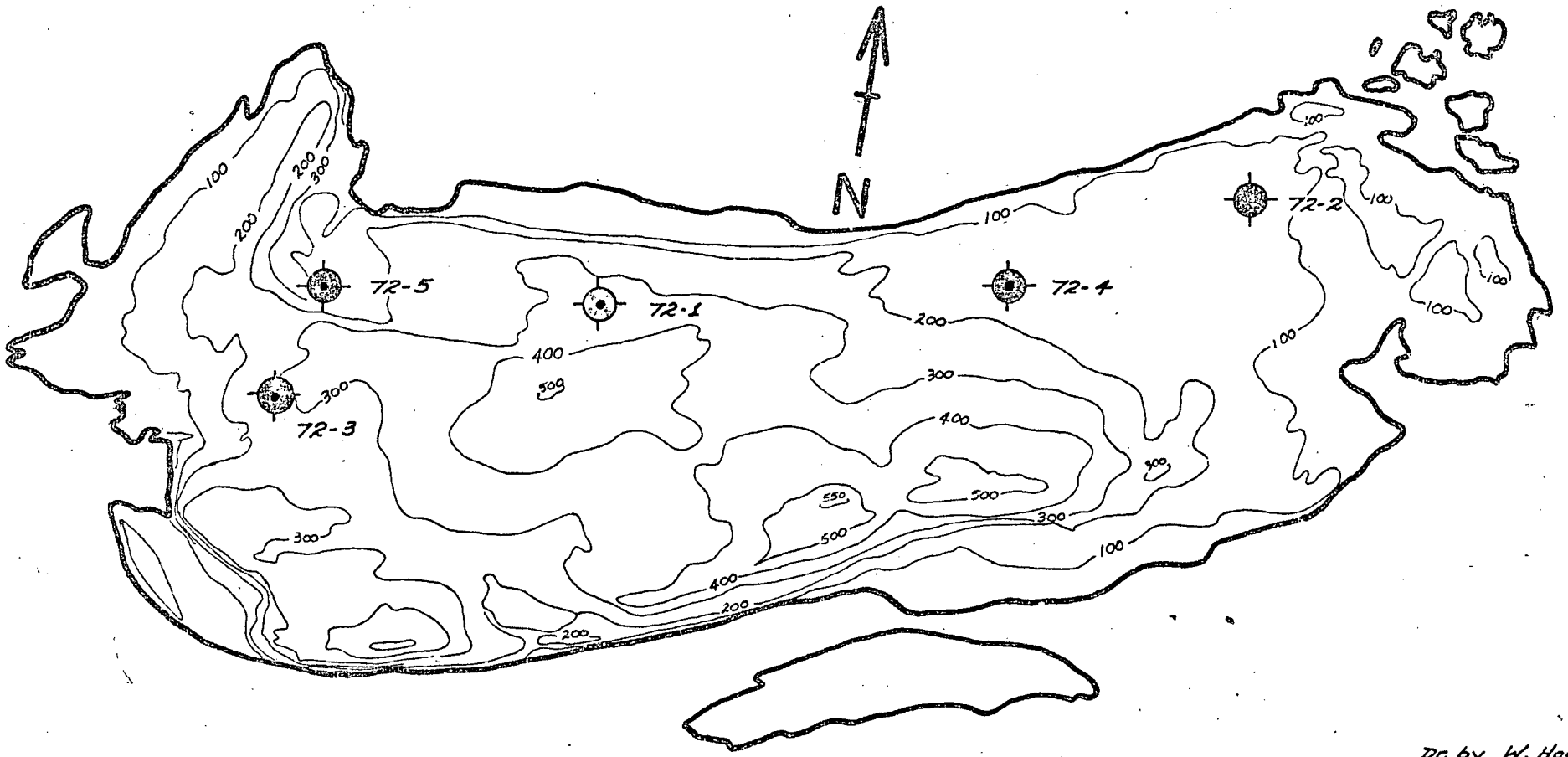
Gabriola Island -
T.D.S. - Depth Relation-
ship in bedrock wells

SCALE: VERT. 1" = 50'
HOR. 1" = 50 mg/l.

DATE
Aug. 1978

ENGINEER

FILE No. ..... DWG. No. Figure 8



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LEGEND

- Abandoned observation well
- Recorder observation well
- Manual observation well

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TO ACCOMPANY REPORT ON
Gabriola Island -
Observation Well
Location

SCALE: VERT. As shown
HOR. As shown

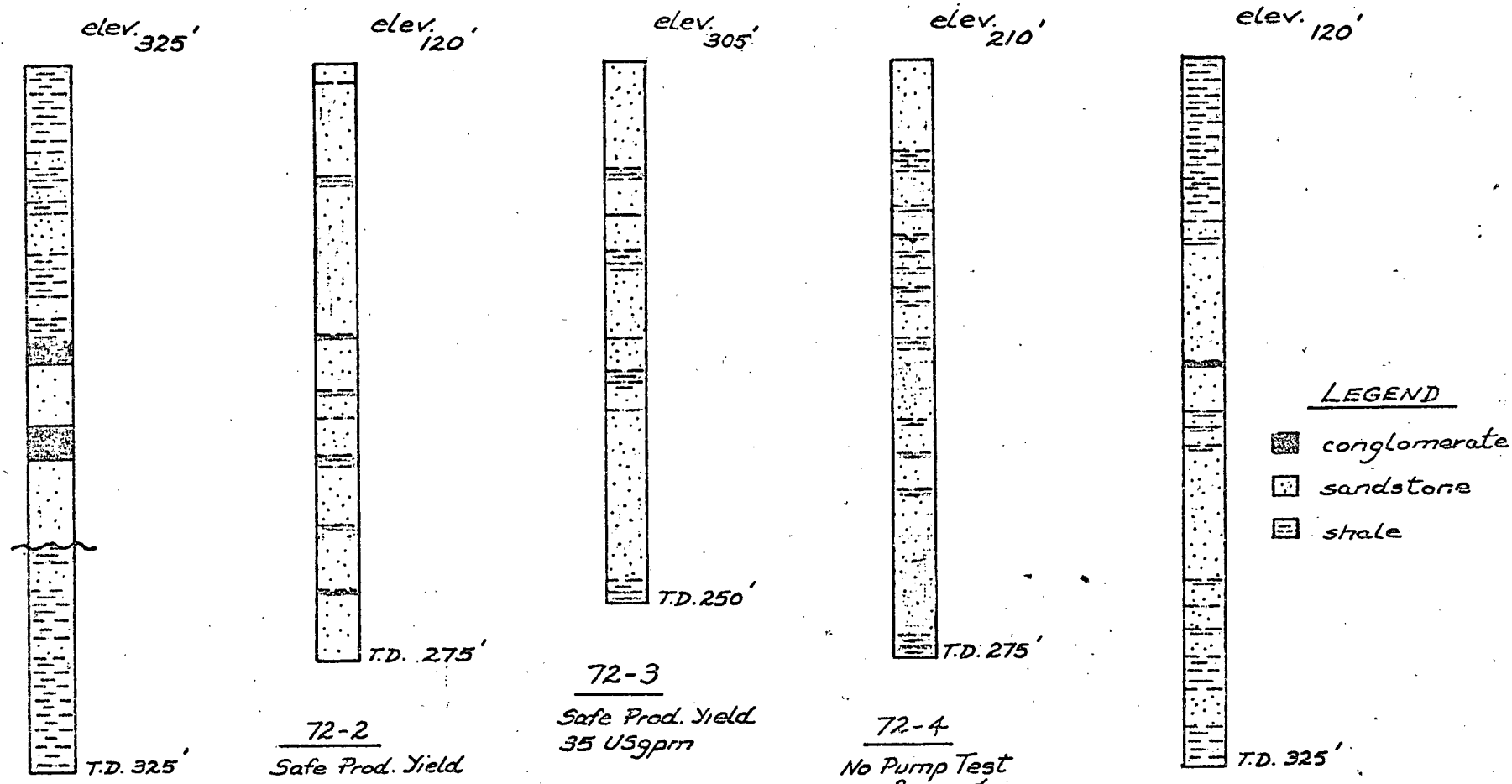
DATE
Aug. 1978

ENGINEER

FILE No. ..... DWG. No. Figure 9

GABRIOLA ISLAND OBSERVATION WELLS

(ACTIVE AND NON-ACTIVE)



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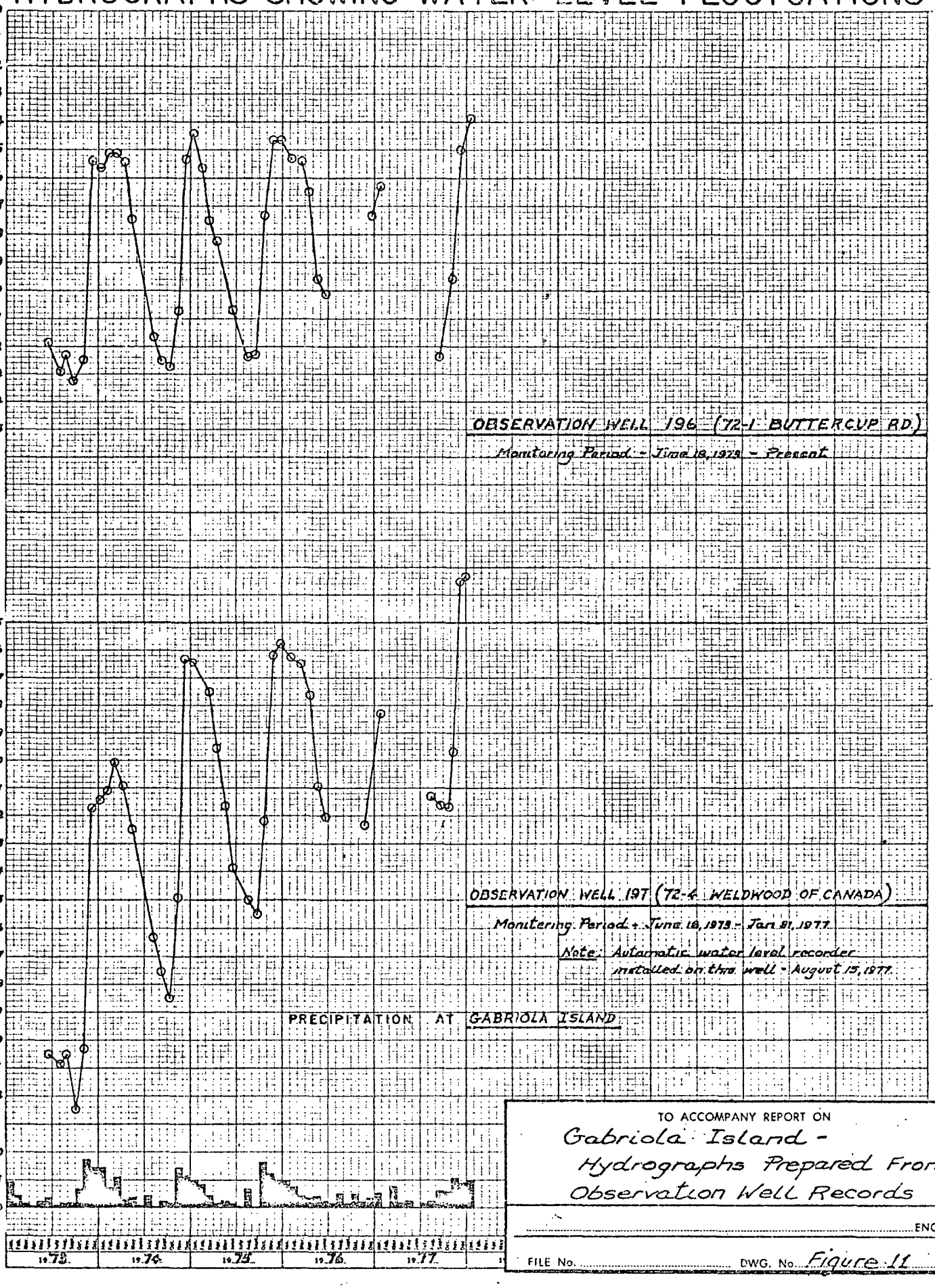
BRITISH COLUMBIA MINISTRY OF THE ENVIRONMENT ENVIRONMENTAL AND ENGINEERING SERVICES WATER INVESTIGATIONS BRANCH	TO ACCOMPANY REPORT ON Gabriola Island - Lithology of Observation Wells.	SCALE: VERT. 1" = 75' HOR. N.T.S. DATE Aug. 1978 ENGINEER FILE No. DWG. No. Figure 10

HYDROGRAPHS SHOWING WATER LEVEL FLUCTUATIONS

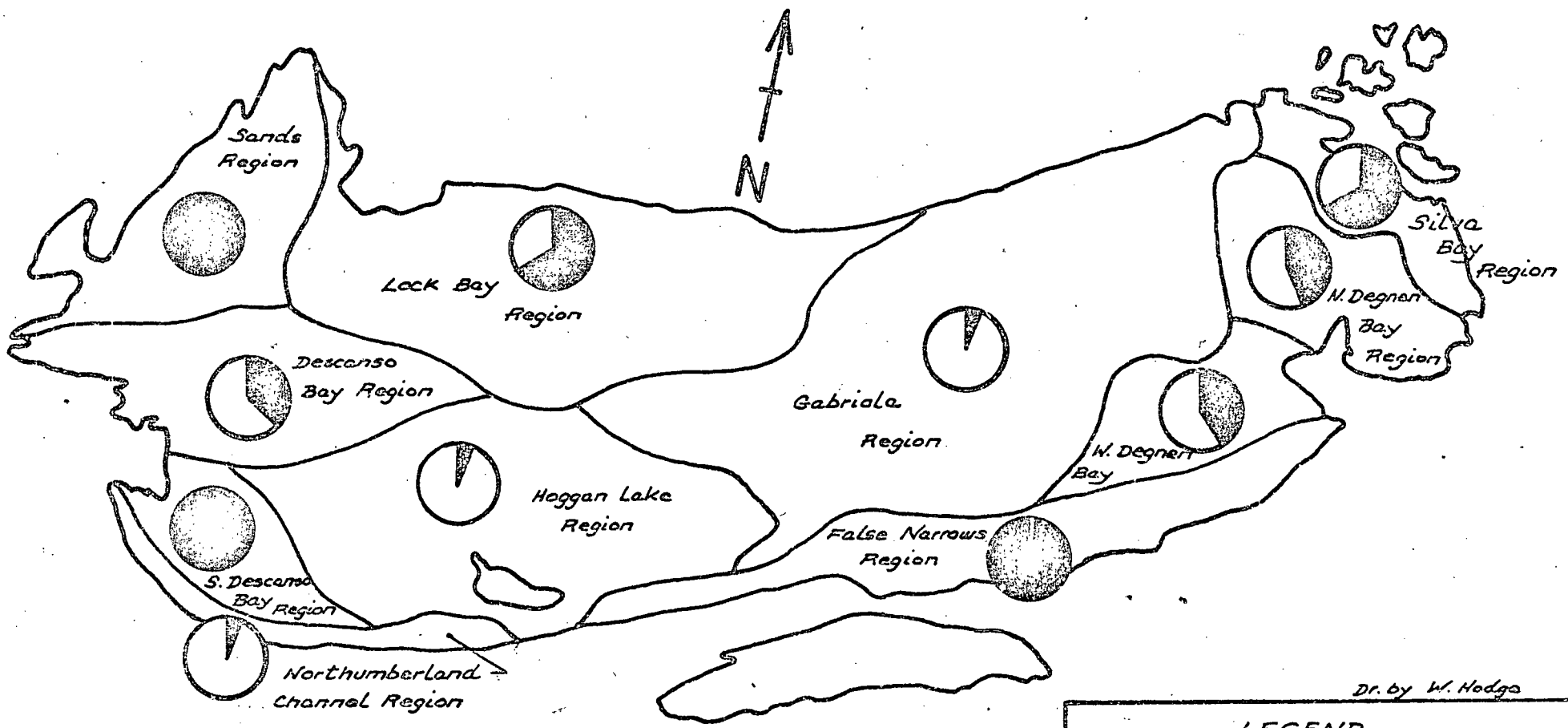


TO ACCOMPANY REPORT ON

Gabriola Island - Hydrographs Prepared From Observation Well Records

ENGINEER

FILE No. DWG. No. Figure 11



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LEGEND

Watershed Region name and Boundary.

Pie Diagram showing estimated water demand expressed as a percentage of groundwater in storage * Black portion denotes demand.

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Gabriola Island - Demand - Storage Percentages

SCALE: VERT. As shown
HOR. As shown

DATE Aug. 1978

ENGINEER

FILE No. DWG. No. Figure 12

GABRIOLA ISLAND WELL INVENTORY, TABLE NO. 1 - HYDROGEOLOGICAL DATA

DEC. 1977

WATERSHED	SECTION	WELL No.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO * W.B.Z.	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
Sands	21	1		204'		145'	25'	2'	Sandstone - Shaley	10 gph	
(1)	21	2		170'	4'	17'; 164'	20'	10'	Sandstone	2.1 gpm	layered sandstone + shale - Hach chem. done
	21	3		171	0'	151'; 165'	20'	4'8"	Sandstone : shale	1 gpm	" " "
	21	4		172'	+	166'	21'	bedrock @ surface	Shale	12 gph	" " "
	21	5		185'	60'	175'	21'	2'	Shale	20 gph	" " "
	21	6		60'	2'	23'; 35'	35'	7'	Sandstone	20 gpm	
	21	7		75'	28'	70'	30'	13'	Shale	2¼ gpm	HACH CHEM DONE.
	21	8		40'	19'	24'	30'	≈8'?	shale	1.5 gpm	" " "
	21	9		78'	35'	66'	31'	≈20'?	Shale	.5 gpm	Salty water
	21	10		247'	30'	101'	37'	7'	sandstone	.1 gpm	water undrinkable - coal gas smell.
	21	11	30'		15'	?	31	-	bedrock ?	?	no log. - reports good.
	21	12	20'		16'	?	28'	?		-	good quality water
	21	13		175'	+	175'	19'	15'	Sandstone : shale	1¼ gpm	HACH CHEM. DONE - Layered Sandstone / Sh
	21	14	24'		20'	?	43'	?	Shale	-	has gone dry
	21	15		60'	-	?	20'	4'4"	Sandstone. Shale	-	DRY HOLE
	21	16	23'		20'	?	38'		?	-	POOR SUPPLY
	21	17'	36'		22'	?	44'	0 ?	BEDROCK		POOR SUPPLY - HACH CHEM. DONE

* Water bearing zone - W.B.Z.

DEC. 1977

GABRIOLA ISLAND WELL INVENTORY, TABLE NO. 1 - HYDROGEOLOGICAL DATA

WATERSHED	SECTION	WELL No.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO * W.B.Z.	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
Sands	21	18		118'	15'	116	16'	5'	Sandstone	1 gpm	Water Salty
	21	19		132	?	?	22'	0 ?	Sandstone	60 gph	bedrock @ surface
	21	20		75'	9	49'	33'	9' ?	Sandstone	0.4 gpm	
	21	21		173	40'	?	35'	4' ?	Sandstone	1 gpm	Sandstone w/ layers shale Hach done poor quality
	21	22		100'	10'	90'	30'	?	Shaley sandstone	20 gph	Hach done - poor quality
	21	23		92'	8'	?	50'	6'6"	sandstone	30 gph	
	21	24		160'	63'	?	25'	15'	Sandstone & shale	½ gpm	Sulphur smell
	21	25		180	+	?	20'	?	Shale - sandstone	15 gpm	pumping level @ 10 gpm - 25' water quite sulphury - some gas.
	21	26		118'	12'	?	25'	?	shale - sandstone	5 gpm	excellent details on log. Hach done poor quality
	21	27		90'	24'	?	30' -	12'	shale & sandstone	4 gpm	
	21	28		270	+	200'	30'	10'	Sandstone	500 gpd	poor quality - HACH DONE
	21	29		175'	8'	160'	30'	6'	Sandstone	¾ gpm	well gone dry - iron
	21	30		270'		270'	20'	14'	Sandstone	20 gph	
	21	31		252	35'	170; 245	30'	5'	Sandstone w/ layers shale	10 gph	Well apparently not being used
	21	32		45	?	?	25'	0	Sandstone	½ gpm	
	21	33		264	—	—	60'	8'	Sandstone & shale	—	DRY HOLE - capped
	21	34		82	20'	70'	25'	9½	Sandstone & shale	—	

* Water bearing Zone - W.B.Z.

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GABRIOLA ISLAND WELL INVENTORY, TABLE NO. 1 - HYDROGEOLOGICAL DATA

WATERSHED	SECTION	WELL No.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO W.B.Z.*	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
Sands	21	35		60'	8'		25'	?	Shale + sandstone	6 gpm	NOT IN USE
	21	36		40'	3'	25'	60'	8'	shale + sandstone	5 gpm	
	21	37		130'	40'	120'	30'	8'	shale + sandstone	12 gph	HACH DONE
	21	38		80'	15'	80'	25'	5'	sandstone	3 gpm	
	21	39		105'	36'	94'-96'	25'	6'	sandstone + shale	2 ½ gpm	
	21	40		58'	20'	50-56	30'	6'	sandstone + shale	4 gpm	
	21	41		80'	?	45-80	50'	8'	shale + sandstone	½ gpm	
	21	42									
	21	43									
	21	44		100'	15'	60' 85-90	125'	4'	shale + sandstone	5 ½ gpm	
	21	45		54'	2'	25 + 50'	60'	7'	sandstone + shale	7 gpm	
	21	46		300'	5'	170'	50'	6'	sandstone	2-3 gph	
	21	47		174'	25'	160'	30'	10'	sandstone	10-12 gpm	
	21	48		110'	15'	100'	20'	6'	sandstone + shale	15 gph	
	21	49		60'	5'	12 + 60'	30'	8'	sandstone - shale	5 ½ gpm	
	21	50 A 15 B 26			10' 6'		60'	?	no log	—	
	21	51		180'	?	100'	10'	?	" "	6 gpm	sulphur smell

* Water bearing Zone - W.B.Z.

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GABRIOLA ISLAND WELL INVENTORY, TABLE NO. 1 - HYDROGEOLOGICAL DATA

WATERSHED	SECTION	WELL NO.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO * W.B.Z.	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
Sands	21	52		170'		162'	25'	6'	sandstone & shale	1 gph	
	21	53		30'	5'	16'	25'		-	3-4 gph	
	21	54		110'	3'	94'	25'	8'	sandstone & shale	2 gpm	HACH DONE poor quality Cl. > 1000 ppm
	21	55		174	?	52' & 171	15'	8'	sandstone & shale	30-50 gpm	coal gas apparently present gas @ 75'
	21	56		280'	30'	178'	20'	5½'	sandstone	4 gph	not used
	21	57		120'	15'	115'	20'	4½'	sandstone	7 gpm	HACH DONE Cl > 1000 ppm.
	21	58		240'	?	?	50'	8'	sandstone & shale	2 gph	
	21	59		292	15'	280	15'	4'	sandstone & shale	10-12 gpm	
	21	60		298	35'	280'	60'	4½'	shale	3 gpm	HACH DONE chloride 1950 ppm
	21	61		125'	30'	90' & 120'	30'	6'	sandstone & shale	1 gpm.	
	21	62		418'	40'	151'	60'	5'6"	shaley sandstone	2 gph	
	21	63		196'	?	154'	60'	3'	sandstone w/ layers shale	8 gph	
	21	64	42'		7'	12'	40'	?	shale	—	
	21	65		105'	?	97'	?	6'	shaley sandstone	3 gpm	
	21	66		105	5'	96'	?	5'	shale	1½ gpm	SITE ID 1400301
	21	67		150'	40'	140'		6'	sandstone	1¼ gpm	
	21	68		115'	15'	85' & 105'		3'	sandstone & clay	1.5 gpm	

* Water bearing Zone - W.B.Z.

GABRIOLA ISLAND WELL INVENTORY, TABLE NO. 1 - HYDROGEOLOGICAL DATA

DEC. 1977

WATERSHED	SECTION	WELL No.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO * W.B.Z.	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
Silva Bay	5	35		110	20'	80'	65'	5'	Sandstone & shale	1/4 gpm	
	5	36									
	5	37		120'	?	?	?	7'	Shale	18 gpm	
	5	38		90'	12'	45 : 90'	?	20'	layers of sandstone & shale	15 gpm	
	5	39		125'	30'	73 : 118'	?	6'	Sandstone & shale	6 gpm	HACH ANALYSIS DONE
	5	40		50'	3'	25 : 40' : 50'	?	12'	Sandstone	2 gpm	
	5	41		70'	2'	40 : 60	?	9'	Conglomerate	25 gpm	
	5	42		85'	30'	80'	?	7'	Sandstone	3/4 gpm	
	5	43									
	5	44	18'	?	?	?	?	?	?		SITE ID # 1400316
	5	45		200'	30'	43-95-120	110'	2 1/2'	Shale & sandstone	10 gpm	HACH ANALYSIS DONE
	5	46		115'	?	40'-109'	?	2'	Sandstone & shale	26 gpm	
	5	47		124'	60'	95 & 115'	?	9'	Conglomerate	1 1/2 gpm	
	5	48		130'	38'	95 & 125	?	4'	Shale & sandstone	5 gpm	
	5	49		109'	40'	101	?	3'	Shale	5 gpm	
	4	6		100'	8'	37 : 60 67 : 71	25'	?	Shale & Sandstone	2 1/2 gpm	SITE ID 1400296
	4	19		90'	7'	10'-77'-90'	?	8'	Sandstone & shale	18 gpm	
	4	20		95'	20'	50'-85'-95'	?	5'	Shale & sandstone	2 gpm	

* Water bearing Zone - W.B.Z.

GABRIOLA ISLAND WELL INVENTORY, TABLE No. 1 - HYDROGEOLOGICAL DATA — DEC. 1977

WATERSHED	SECTION	WELL No.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO * W.B.Z.	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
North Degnen BAY	1	14		144'	?	?	25'	8'	Sandstone	5gpm	
	1	18'		202'	63'	193'	70'	10'	Sandstone	10gpm	
(6)	1	19		83'	57'	63'	60'	3.5	Sandstone; shale	1.5gpm	SITE ID 1400298 HACH ANALYSIS
	1	20		110	3'	20' & 100	65'	4'	Sandstone	5gpm	
	1	40		175	40'	140' & 169'	?	6'	Sandstone	3.5gpm	
	1	42		135'	40'	110' & 125' 135'	?	3'	Sandstone & shale	2½gpm	HACH DOME
	1	61		160'	55'	105' & 144'	?	3'	Sandstone & shale	1¼gpm	
	1	66		160	65'	140' & 153	?	6'	shale & sandstone	12gpm	
	4	1	28'		14'	?	?	?	TILL	good supply	- filled in
	4	2		147'	32'	76' & 79' 101' & 126'	35'	3'	Sandstone - shale	2.3gpm	
	4	3		60'	23'	33' & 52' 55' & 58'	30'	?	Sandstone & shale	2½gpm	
	4	4		60'	17	33' & 51-60'	35'	4½'	Shale	2gpm	
	4	5		100'	55'	?	80'	?	Sandstone w/shale stringers	4gpm	
	4	7		120'	9'	?	40'	3'	Sandstone	1½gpm	
	4	8		90'	16'	62' & 82'	50'	3½'	Sandstone	+10gpm	
	4	9		60'	10-15'	58'	35'	?	"	3gpm	
	4	10		135'	15'	30' & 130'	40'	5'	Sandstone; shale	3gpm	

* Water bearing Zone - W.B.Z.

GABRIOLA ISLAND WELL INVENTORY, TABLE NO. 1 - HYDROGEOLOGICAL DATA

DEC. 1977

WATERSHED	SECTION	WELL No.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO W.B.Z.*	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
North Region Bay	4	11		130'	70'	70 : 123'	30'	4'	sandstone & shale	1½ gpm	
	4	12		150'	50'	30 : 75 : 120 : 150	80'	4'	Sandstone : shale	2½ gpm	
	4	18		150'	50'	125 : 150	?	?	Sandstone : shale	1½ gpm	
	4	21		90'	20'	82'	?	7'	Sandstone : shale	4½ gpm	
	4	22		90'	?	?	?	?	no log	1-2 gpm	HACH DONE Cl >1000
	4	23		160'	30'	151'	?	5'	Sandstone & shale	20+ gpm	
	4	24		80'	25'	55 : 70'	?	4½'	Sandstone : shale	10½ gpm	
	4	25		135'	15'	90 : 120 : 135	?	10'	Sandstone w/shale lenses.	3gpm	
	4	26		60'	20'	60'	?	10'	Sandstone	15gpm	
	4	27		145'	40'	105 : 135'	?	15'	Shale & sandstone	12 gpm	
	5	5		108'	24'	34 : 103 : 108	100'	?	Sandstone w/ctreaks of shale	3½ gpm	HACH DONE
	5	36		52'	16'	26 : 42'	?	6'	Sandstone : shale	2 gpm	
	5	43		180'	120'	153 : 174	?	4'	Sandstone	3½ gpm	
	6	1	8'		2'	?	?	?	no log	?	
	6	8		110'	12'	35 : 101	?	4'	sandstone : shale	3¼ gpm	
											* Water bearing Zone - W.B.Z.

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GABRIOLA ISLAND WELL INVENTORY, TABLE No. 1 - HYDROGEOLOGICAL DATA

WATERSHED	SECTION	WELL No.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO W.B.Z.*	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
West Degnen Bay	1	6		231	—	—	70'	—	—	—	DRY HOLE
(7)	1	7	4'		2'	2'	30'		Located in dry creek bed	GOOD SUPPLY	—
	1	8	30'		15'	?	50'	?	Bedrock	good supply	
	1	10		60'	1½'	58+60'			Sandstone & shale	10 gpm	MACHDONE Cl=650 ppm
	1	11		103'	40'	103'	35'		?		MACHDONE Cl= 450 ppm
	1	12	4	?	?	?	15'	?	GRAVEL	GOOD SUPPLY	
	1	15		60'	?			7'	shale	1 gpm	NOT BEING USED
	1	23		55'	20'	48'	15'	34'	Sandstone & shale	20 gpm	33' of O.B.
	1	26		110'	30'	75+95', +100'	40'	3'	Sandstone	2½ gpm	NOT BEING USED
	1	33		100	2'	?	75'	25'	Sandstone & shale	3 gpm	SULPHUR PRESENT
	1	34		40'	12'	?	20'	12'	?	6 gpm	
	1	35		80'	10'	70'	60'	2'	Sandstone	4 gpm	
	1	39		70'	20'	61+66'	?	17'	Sandstone	11½ gpm	
	1	41		125'	15'	20' & 118'	?	5'	Sandstone - shale	3 gpm	SAID ID # 1480308
	1	44		75'	8'	55'	?	2'	Sandstone	3½ gpm	
	1	46		70'	12'	60'	?	3'	Sandstone - shale	25 gpm	
	1	47		75'	10'	69'	?	37'	shale	8 gpm	40' of O.B.

* Water bearing Zone - W.B.Z.

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GABRIOLA ISLAND WELL INVENTORY, TABLE No. 1 - HYDROGEOLOGICAL DATA

WATERSHED	SECTION	WELL No.	WELL DEPTH		S.W.L.	DEPTH TO * W.B.Z.	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
			DUG	DRILL							
West Degnen Bay	i	56		138'	?	?	?	?	?	½ 2 gpm	NOT IN USE
	1	65		165'	30'	35:155'	?	5'	Sandstone	8 gpm	

* Water bearing Zone. - W.B.Z.

GABRIOLA ISLAND WELL INVENTORY, TABLE NO. 1 - HYDROGEOLOGICAL DATA

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WATERSHED	SECTION	WELL No.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO * W.B.Z.	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
False Nanoose	L.	1	18'		8'	?	110'		Bedrock?	good supply	
(8)	1	2	9'		6'	?	115'		TILL - Sandstone	good supply	
	1	3	14'		3'	?	105'		no log	good supply	
	1	4	14'		10'	?	100'		bedrock?	good supply	QUALITY good.
	1	5	14		10'	?	70'		"	"	" "
	1	9		140'	30'	38'	130'		shale	1.5gph	
	1	13	28'		12'	?	25'		bedrock	poor	
	1	16		80'		73'	25'		Sandstone	3gpm	
	1	17		88'	36'	80'	30'		Sandstone	8 gpm	
	1	21		150'	100'	135'	?		Sandstone; clay	3½gpm	HACH ANALYSIS
	1	22		200'		122'	120'		Shale; clay	1 gpm	
	1	24		80'	15'	75 & 80'	35'	2½'	Sandstone + shale	5gpm	
	1	25		118'	20'	110'	50'	6'	Sandstone	½ gpm	NOT BEING USED
	1	27		130'	50'	80 & 130'	150'	6'	Cong. + granite	½ gpm	NOT BEING USED (GRANITE REPORTED?)
	1	28		80'	40'	70 + 80'	150'	6'	Cong. & Sandstone	2gpm	
	1	29		105'	15'	?	65'	?	?	½gph	
	1	30		250	100'	75 & 100'	65'	4'	Sandstone	½gpm	Thick formation of blue clay underlying sandstone.

* Water bearing zone - W.B.Z.

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GABRIOLA ISLAND WELL INVENTORY, TABLE NO. 1 - HYDROGEOLOGICAL DATA

WATERSHED	SECTION	WELL NO.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO W.B.Z.*	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
False Narrows	1	31		110'	?	70'	50'	4'	Sandstone	½ gpm	
		32		80'	?	55'	35'	33'	Sandstone & shale	¾ gpm	
		36		220'	?	50 & 220'	70'	?	?	1½ gpm	
		37		175'	60'	25 & 160'	?	3'	clay & shale in layers	1½ gpm	
		38		90'	20'	60-70 & 80-90'	?	7'	granite	2 gpm	granite again reported
		43		165	10'	150 & 160'	?	7'	sandstone & shale	6½ gpm	
		45		100	12'	?	?	3'	Sandstone & blue clay	7½ gpm	
		48		175'	95'	150 & 170'	?	30'	Shale & Sandstone.	1½ gpm	
		49		90'	30'	40 & 78'	?	20'	clay & shale in layers.	8 gpm	
		50		250	?	120	?	28'	clay & shale	1½ gph	
		51		75	25'	40 & 55'	?	3'	Sandstone	7 gpm.	
		52		125	0	45 & 80' & 110'	?	8'	Sandstone & shale	3¼ gpm	
		53		150'	50'	135 & 140'	?	2'	Conglomerate & shale	5 gpm	
		54		230'	?	210'	?	2'	clay and shale	8 gph	
		55		200'	?	165'	?	4'	shale & clay	3 gph	
		57		180'	3'	145 & 181'	?	6'	shale & clay	4 gpm	
		58		190'	85'	160' & 178'	?	40'	shale & clay	¾ gpm	

* Water bearing Zone - W.B.Z.

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GABRIOLA ISLAND WELL INVENTORY, TABLE NO. 1 - HYDROGEOLOGICAL DATA

WATERSHED	SECTION	WELL No.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO * W.B.Z.	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
False Narrows	1	59		190'	?	175'	?	4'	shale & clay	½ gpm	
	1	60		200'	34'	145' & 175', 200'	?	10'	shale & clay	3 gpm	
	1	62		170'	85'	161'	?	3'	shale & clay	5 gpm	
	1	63		135'	?	?	?	?	no log	?	HACH DONE COND OVER 8000
	1	64		200'	70'	175'	?	4'	clay & shale	½ gpm	
	2	1	11		10'	?	80'	?	shale	→	good supply
	2	2	14		?	?	80'	?	no log.	good	
	2	3		62'	24'	57'	54'	25'	shale & sandstone	5 gpm	
	2	4		45'	9'		50'	10'	shale	10 gpm	
	2	5		40'	15'	25' & 34'	35'	?	shale	2 gpm	
	2	6		56'	34'		140'	13'5"	sandstone	2½ gpm	
	2	7		100'	21'	77' & 95'	175'	11'7"	Conglomerate	8 gpm	HACH DONE
	2	8		40'	16'	<18'	65'	2'4"	shale	10 gph	
	2	9		70'	30'	57' & 63'	65'	16'	shale w layer sandstone	55 gph	
	2	10	——	120'	50'	115'	125'	6'	shale & sandstone	3 gpm	layered sandstone - conglomerate
	2	11		155'	80'	65' & 85' 145'	100'	2'	Sandstone	1 gpm	HACH DONE granite reported ?
	2	12		90'	36'	70' & 80'	55'	21'	shale	10 gpm	

* Water bearing Zone - W.B.Z.

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GABRIOLA ISLAND WELL INVENTORY, TABLE NO. 1 - HYDROGEOLOGICAL DATA

WATERSHED	SECTION	WELL No.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO * W.B.Z.	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
False Narrows	2	13		50'	4'	24' ; 30' ; 40'	55'	22'	shale	2½ gpm	
		14		105'	10'	35 ; 95	125'	7'	clay & shale	2 gpm.	
		15		133'	40'	70 ; 126'	145'	4'	shale & sandstone	3 gpm	
		16		90'	8'	35' ; 80'		6'	shale & clay	9 gpm	
		17		80'	15'	50' ; 71'	?	6'	Sandstone & clay	1½ gpm	
		18		90'	?	83'	?	6'	clay & shale	20 gpm	
		19		90'	15'	82'	?	31'	shale & clay	6 gpm	
		20		75'	18'	67'	?	16'	shale & clay	12 gpm	
		21		105'	14'	45' ; 95'	?	6'	shale & sandstone	3.5 gpm	
		22		125'	6'	28' ; 117	?	20'	clay & shale	9 gpm	
		23		80'	18'	40' ; 70'	?	26'	shale & clay	10 gpm	
		24		90	80'	80'	?	19'	clay and shale	8 gph	
		26		80'	40'	30' ; 65'	?	14'	clay & shale	6 gpm	
		27		145'	35'	65' ; 135'	?	4'	Sandstone & clay	5½ gpm	
		28		135'	96	125	?	5'	clay and sandstone	15 gpm.	
		29		85'	50'	75'	?	3'	Sandstone & clay	3 gpm	
		25		115'	6'	40' ; 105'		21'	clay & shale	2 gpm	

* Water bearing Zone - W.B.Z.

GABRIOLA ISLAND WELL INVENTORY, TABLE NO. 1 - HYDROGEOLOGICAL DATA

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WATERSHED	SECTION	WELL No.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO * W.B.Z.	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
False Narrows	2	30		115'	20'	30' ; 110'	?	15'	clay & shale	2½ gpm.	
		31		110	30'	65' 101' 100'	?	17'	clay & shale	5 gpm.	
		32		105'	10'	25' 95'	?	10'	CLAY & shale	3 gpm.	
		33		95'	10'	12' 85'	?	11'	shale & clay	15 gpm.	
		34		160'	70'	85' ; 145'	?	7'	clay & shale	19½ gpm	
		35		105'	3'	60' ; 90'	?	8'	Sandstone	15 gpm	
		36		85'	10'	50' 73' 79'	?	5'	Sandstone	2 gpm	
		37		100'	10'	50' 90' 95'	?	4'	shale & sandstone	10 gpm	
		38		90'	3'	28' 79'	?	27'	shale & clay	16 gpm	
		39		100'	20'	30' 90'	?	24'	clay & shale	15 gpm	
		40		110'	20'	92' 95' 98'	?	82'	Sandstone	8 gpm	Limestone reported. 82' conclundan gravel & clays.
		41		75'	13'6"	68'	?	20'	shale	2 gpm	
		42		58'	12'	58'	?	60'	gravel	10 gpm	Deep O.B. (well comp. in gravel)
		43		150'	20'	55' & 125'	?		shale & clay	2½ gpm	
		44		240'	60'	230'	?	16'	clay & shale	½ gpm	
		45		145	18'	95' ; 135'	?	6'	clay & shale	5 gpm	
		46		150	20'	105'	?	11'	clay & shale	¼ gpm	
		47		90'	3'	35' 80'	?	2'	SHALE	8 gpm	* Water bearing Zone - W.B.Z.

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GABRIOLA ISLAND WELL INVENTORY, TABLE NO. 1 - HYDROGEOLOGICAL DATA

WATERSHED	SECTION	WELL No.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO W.B.Z.*	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
False Narrows	2	48		170'	35'	85'	?	20'	SHALE	8 gph	
	2	49		50'	10'	43'	?	15'	SHALE	3½ gpm	
	2	50		135'	5'	70', 124'	?	9'	SHALEY SANDSTONE	3 gpm.	
	2	51		135'	?	125, 130'	?	19'	Sandstone & shale	2 gpm	
	2	52		170'	120'	160'	?	6'	Sandstone / shale	8 gpm	
	3	1	5'		?	?	70'	?	Shale	good supply	
	3	2	6'				35'	?	?	good supply	
	3	3		65'	16'	25', 58'	20'	?	shale	40 gph	
	3	4		56'	?	?	75'	14'	Sandstone & shale	3 gpm	
	3	5		80'	30'	70'	25'	9'	clay & shale	¾ gpm	
	3	6		70'	10'	30', 55', 70'	75'	19'	Sandstone	2½ gpm	
	3	7		40'	8'	31', 40'	65'	16'	shale - clay	2 gpm.	
	3	8		40'	3'	20', 40'	70'	18'	clay & shale	35 gpm	
	3	9		40'	8'	23', 31', 40'	115'	18'	clay & shale	15 gpm	
	3	10		40'	2'	20', 33'	155'	18'	clay & shale	4½ gpm	
	3	11		116'	30'	105'	200'	82'	shale & clay	2 gpm	81 overburden recorded
	3	12		150'	30'	110', 140'	230'	85'	shale & clay	2½ gpm	85' " "
	3	13		110'		80'	?	15'	clay and shale	½ gpm	

* Water bearing Zone - W.B.Z.

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GABRIOLA ISLAND WELL INVENTORY, TABLE NO. 1 - HYDROGEOLOGICAL DATA

WATER-BED	SECTION	WELL No.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO * W.B.Z.	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
False Narrows	3	14		65'	10'	50' 65'	?	14'	CLAY & SHALE	2½ gpm	
	3	15		60'	8'	32' 55' 60'	?	16'	CLAY & SHALE	6½ gpm	
	3	16		90'	16'	30' 82'	?	10'	CLAY & SHALE	10 gpm	
	3	17		80'	?	56' 72'	?	17'	CLAY & SHALE	3 gpm	
	3	18		85'	30'	76'	?	13'	CLAY & SHALE	5 gpm	
	3	19		125'	4'	48' 105' 125'	?	31'	CLAY & SHALE	4 gpm	
	3	20		125'	10'	40' 118'	?		CLAY & SHALE	20 gpm	
	3	21		130'	45'	102'	?	48'	CLAY & SHALE	¾ gpm	SITE ID 1400309 (49' O.B. reported)
	3	22		167'	65'	155'	?	16'	SHALE & CLAY	2½ gpm	
	3	23		160	8'	70' 90'	?	25'	SHALE & CLAY	20 gpm	
	3	24		115'	25'	95' 106'	?	30'	SHALE & CLAY	4½ gpm	
	3	25		105'	18'	17' 98'	?	6'	Shale & Sandstone	12 gpm	
	3	26		110'	35'	95'	?	36'	SHALE & CLAY	1.5 gpm	
	3	27		90'	15'	31' 82'	?	16'	CLAY & SHALE	6 gpm	
	3	28		110'	12'	28' 90'	?	14'	CLAY & SHALE	15 gpm	
	3	29		90'	20'	50' 80'	?	17'	SHALE & CLAY	10 gpm	
	3	30		155'	50'	60' 110' 140'	?	23'	CLAY & SHALE	2 gpm	
	3	31		90'	12'	27' 80'	?	16'	CLAY & SHALE	1½ gpm	* Water bearing Zone - W.B.Z.

GABRIOLA ISLAND WELL INVENTORY, TABLE NO. 1 - HYDROGEOLOGICAL DATA

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WATERSHED	SECTION	WELL No.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO W.B.Z.*	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
Fake Narrows	3	32		140'	20'	45'	?	21'	shale & clay	1 gpm	
	3	33		95'	20'	55'	?	19'	CLAY & SHALE	2 gpm	
	3	34		225'	48'	105' 200'	?	9'	SHALE & SANDSTONE	½ gpm	
	9	1	SPRING	–	+	–	310'	–	?	good	
	10	1	7'		3'	–	320'	–	bedrock	?	
	10	2		50'	25'	45'?	300'	14½'	shale & sandstone	1½ gpm	
	10	3		145'	30'		325'	16'	sandstone & congl.	1¼ gpm	
	10	4		112'	?	100' 112'	260'	3'	shale & congl.	4½ gpm	
	10	5		110'	40'	75' 105'	?	8'	sandstone & shale	5¼ gpm	
	28	1	8'		?	–	30'	?	shale & clay	Fair	
	28	2		2200'	+						TEST HOLE FOR COAL DRILLED <1930
	28	3		172'	?	70' 172'	25'	14'	shale	960 gpd.	
	28	4		160'	15'	50' 120' 140'	50'	20'	shale & blue clay	1½ gpm	
	28	5		65'	20'	55'	30'	17'	shale & clay	3 gpm	
	28	6		72'	12'	40' 62'	30'	11½'	shale & clay	2½ gpm	
	28	7		85'	20'	60' 85'	10'	16'	shale & clay	1½ gpm	
	28	8		200'	30'	125' 180'	50'	10'	shale & clay	1½ gpm	HIGH DOME
	28	9		70'	17'	17' 60' 70'	50'	16'	sandstone & shale	4½ gpm	

* Water bearing Zone - W.B.Z.

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GABRIOLA ISLAND WELL INVENTORY, TABLE No. 1 - HYDROGEOLOGICAL DATA

WATERSHED	SECTION	WELL No.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO * W.B.Z.	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
False Narrows	28	10		70'	10'	60'	50'	15'	CLAY ?	10 gpm	
		11		70'	20'	20' 60'	50'	10'	CLAY & SHALE	2½ gpm	
		12		90'	10'	85'	50'	13'	" "	8 gpm	
		13		60'	15'	35' 50'	50'	18'	SHALE	25 gpm	
		14		70'	25'	20' 60' 70'	?	10'	CLAY & SHALE	5.5 gpm	
		15		80'	24'	68' 80'	?	20'	CLAY & SHALE	5 gpm	
		16		80'	15'	50' 70' 80'	?	22'	CLAY & SHALE	3 gpm	
		17		100'	6'	100'	? 25 ?	15'	CLAY & SHALE	11 gpm	
		18		100'	7'	24' 60' 80'	25' ?	12'	SHALE & CLAY	5 & 5 gpm	
		19		100'	1.5'	26' 42' 75' 100'	25' ?	15'	" "	36 & 5 gpm	
		20		100'	+	22' 70' 100'	25' ?	18'	" "	50 gpm	
		21		95'	20'	27' 85' 90'	?	20'	SHALE & CLAY	6 gpm	
		22		105'	20'	42' 96'	?	26'	SHALE & CLAY	1½ gpm	
		23		200'	25'	193'	?	13'	SHALE & CLAY	½ gpm	
		24		100'	12'	40' 85'	?	20'	SHALE & CLAY	8½ gpm	
		25		120'	16'	110'	?	20'	SHALE	2 gpm	
		26		90'	27'	70'	?	14'	SHALE	½ gpm	
		27		80'	17'	35' 65'	?	16½'	SHALE	2¼ gpm	

* Water bearing Zone - W.B.Z.

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GABRIOLA ISLAND WELL INVENTORY, TABLE No. 1 - HYDROGEOLOGICAL DATA

WATERSHED	SECTION	WELL No.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO W.B.Z.*	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
HOGAN LAKE	11	1		?	?	?	?	?	Sandstone	good supply	no information available
(9)	11	2		100'	25'	85'	?	3'	Shale & sandstone	3½ gpm	
	12	8		75'	12'	30' & 70'	?	7'	sandstone & shale	5 gpm	HAND PUMP.
	12	16		140	6'	12' & 60' 85' & 130'	?	4'	Shale & sandstone	20 gpm	
	12	17		130'	25'	40' & 60' 100' & 125'	?	3'	Sandstone & shale	40 gpm	
	12	18		130'	?	45' & 60' 90' & 130'	?	9'	Sandstone & shale	20 gpm	
	12	19		130'	12'	40' & 65' 98' & 130'	?	3'	Sandstone & shale	50 gpm	
	12	20		174'	20'	168'	?	9'	Sandstone & shale	20 gpm	
	12	30		190'	25'	181'	?	4'	Sandstone & shale	1 gpm	SITE ID # 1400288
	12	37		105'	30'	95'	?	3'	Shale in layers	20+ gpm	
	12	38		165'	30'	156'	?	4'	Sandstone	12 gpm	
	12	41		105'	40'	89' & 97'	?	3'	Sandstone	2 gpm	
	12	42		165'	15'	40' 160' & 155'	?	6'	Sandstone	12 gpm	
	12	43		100'	30'	85'	?	6'	Sandstone & shale	2 gpm	
	12	52		100'	30'	90'	?	5'	Shale & sandstone	10 gpm	
	12	53		245'	90'	232'	?	4'	Sandstone & shale	1 gpm	
	13	2		110'	15'	20' & 90' & 110	250'	8'	Sandstone & shale	20 gpm	

* Water bearing Zone - W.B.Z.

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GABRIOLA ISLAND WELL INVENTORY, TABLE NO. 1 - HYDROGEOLOGICAL DATA

WATERSHED	SECTION	WELL NO.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO * W.B.Z.	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
Hogan Lake	13	3		75'	6'	45' & 60' : 75'	250'	6'	Sandstone	20 gpm	
	13	7		180'	12'	?		5'	Shale & sandstone	10 gph	
	13	8		60'	14'	7'6"		9'	Sandstone	15 gphm	
	13	17		100'	22'	?		11'	Shaley sandstone	1¼ gpm	
North	27	1		240	130'	228'		8'	shale & blue clay	8 gpm	
Cumberland Watershed (10)	12	32		210	30'	130 : 198'		6'		4 gpm	
South Descanso BAY	12	4		140'	?	65' & 130'	85'	11½'	Sandstone & conglomerate	8 gpm	
	12	5		245'		?	300'	5'	shale	2 gph	
(11)	12	6		75'	?	61	320'	2'	Sandstone	4½ gpm	
	12	9		115	+	?	24'	12'	Shale & sandstone	?	HACH DONE
	12	10		135'	+	?	24'	16'	Sandstone & shale	6½ gpm	
	12	11		60'	2'	55'	15'	12'	Sandstone	32 gpm	
	12	12		226'	?		22'		Sandstone : shale	?	ABANDONED
	12	13		60'	2'	22' & 45' 55'	23'	7'	Sandstone & shale	9 gpm	HACH DONE
	12	14		90	1'	45' & 80'	19'	17'	Sandstone & shale	17 gpm	HACH DONE
											* Water bearing Zone - W.B.Z.

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GABRIOLA ISLAND WELL INVENTORY, TABLE NO. 1 - HYDROGEOLOGICAL DATA

WATERSHED	SECTION	WELL NO.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO * W.B.Z.	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
South Descanso Bay	12	15		90'	2'	26' 30' 40' 65' 85'	23'	5'	Sandstone & shale	24 gpm	
	12	23		100'	25'	30' & 90'	?	12½'	shale & sandstone	20½ gpm	
	12	24		300'	?	150' & 280'	?	6'	sandstone & shale	½ gpm	
	12	25		155'	30'	145'	?	3'	sandstone & shale	2.5 gpm	
	12	27		275'	?	200'	?	4'	sandstone & shale	.05 gpm	
	12	28		210'	?	?	?	5'	sandstone	?	
	12	31		190'	25'	15' & 184'	?	4'	Sandstone	10 gpm	
	12	33	SPRING		+ ?	?	?	?	?		# 1400313
	12	34		200'	75'	90' & 193'	?	4'	Sandstone	2¼ gpm	
	12	35		190'	80'	178'	?	5'	shale	½ gpm	
	12	39		260'	162	205' & 260	?	10'	Sandstone & clay	1¼ gpm	
	12	44		105'	?	95'	?	7'	?	½ gpm	
	12	45		105'	30'	96'	?	13'	shale	7 gpm	
	12	46		39'	3'	21'	?	12'	shale & clay in layers	10 gpm	
	12	51		265'	90	90' & 255		5'	Sandstone - shale	2½ gpm	
	12	54		300'	15'	?		5'	clay & shale in layers	1 gpm	
	12	55		77	17'	37' & 55'		8'	shale	8 gpm	

* Water bearing Zone - W.B.Z.

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GABRIOLA ISLAND WELL INVENTORY, TABLE NO. 1 - HYDROGEOLOGICAL DATA

WATERSHED	SECTION	WELL NO.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO * W.B.Z.	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
South Descanso Bay	25	1		60'	22'	58'	20'	2'	Sandstone & conglomerate	10 gpm	HACH DONE
		2		102'	23'	79'-100'	50'	8'	Sandstone	10 gpm	HACH DONE
		3		105'	+	96'	20'	4'	Sandstone	10 gpm	HACH DONE
		4		266	13'	?	20'	4'	Sandstone	5gpm?	-
		5		142	80'	139'	80'	3'	Sandstone & shale	4 gpm	
		6		55	?	?	20'	?	no log	?	
		7		236'	20'	120'	20'	4	Shale & clay	3 gpm	HACH DONE
		8		95'	5'	85'	?	8'	Shale & conglomerate	16 gpm	
		9		130	75'	120'	?	5'	Sandstone	15 gpm	
		10		150'	11'	142	?	11'	Sandstone	8 gpm	HACH DONE (Northumberland Channel watershed)
		11		190'	40'	185'	?	4'	Sandstone & congl.	20+ gpm	
		12		65'	0	12'	?	4'	Sandstone	10 gpm	
	20	2	12				14		TILL	POOR SUPPLY	
		5		85	FLOWING	78'	10	2'8"	SHALE, CONG. SANDSTONE	10 gpm	2-3
		15		85	FLOWING	35-60 70-80	14	13	SANDSTONE	30 GPM	
		16		170	25	160	?	7	BLUE SHALE	1 GPM	
		17		140	12	50, 132		11	BLUE SHALE	1½ gpm	
		21		190	80	170, 190		6	SHALE & CONGLOMERATE	1½ gpm	* Water bearing zone - W.B.Z.

TABLE 2 - QUANTITATIVE ESTIMATES OF PRESENT GROUNDWATER USE VERSUS AVAILABLE STORAGE

GROUNDWATER REGION	AREA OF REGION IN ACRES	PRELIMINARY ESTIMATES OF GROUNDWATER SUPPLIES IN STORAGE AND RECOVERABLE BY MINING - EXPRESSED AS % EST. BEDROCK VOL. IN AC.-FT. ASSUMING DEPTH OF 200' - FOR 0.01% IN AC.FT. (1)	WELLS & SPRINGS IN REGION	ESTIMATED YIELD IN GPM USAGE 500 GPD PER WELL	ESTIMATED GROUND-WATER USAGE IN GALLONS BASED ON 500 GPD/PER 100 DAY PUMPING (2)
1. Sands	864.19	17.28	175	60.76	8.7×10^6
2. Lock Bay	2188.93	43.78	200	63.44	10×10^6
3. Descanso Bay	1420.93	28.42	71	24.65	3.5×10^6
4. Gabriola	3148.93	62.98	25	8.68	1.2×10^6
5. Silva Bay	563.01	11.26	51	17.70	2.5×10^6
6. North Descanso Bay	553.15	11.06	32	11.11	1.6×10^6
7. West Degnen Bay	422.46	8.45	19	6.60	9.5×10^5
8. False Narrows	1414.21	28.28	178	61.80	8.9×10^6
9. Hoggan Lake	1977.73	39.55	22	7.64	1.1×10^6
10. Northumberland Channel	204.93	4.10	2	.69	1×10^5
11. South Descanso Bay	339.20	6.78	49	17.01	2.4×10^6

ESTIMATED AVAILABLE RECHARGE TO GROUNDWATER FROM PRECIPITATION IN U.S. GALLONS BASED ON 1" OF ANNUAL PRECIPITATION AVAILABLE FOR GROUNDWATER STORAGE	ESTIMATED GROUNDWATER USAGE VERSUS AVAILABLE RECHARGE EXPRESSED AS A PERCENTAGE BASED ON COLUMNS	ESTIMATED GROUNDWATER USAGE VERSUS GROUNDWATER IN STORAGE EXPRESSED AS A PERCENTAGE.
(3)	(2) & (3)	(2) & (1)
2.35×10^7	37	154.0
5.9×10^7	16.9	70.0
3.9×10^7	9.0	37.8
8.5×10^7	1.4	5.8
1.5×10^7	16.7	68.1
1.5×10^7	10.7	44.4
1.1×10^7	8.6	34.5
3.3×10^7	23.4	95.6
1.1×10^7	10.0	8.5
5.5×10^6	1.8	7.5
9.2×10^6	26.1	108.6

GABRIOLA ISLAND WELL INVENTORY, TABLE No. 1 - HYDROGEOLOGICAL DATA

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WATERSHED	SECTION	WELL No.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO * W.B.Z.	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
Sands	21	86		295		60' : 200/230'	?	7'	shale & sandstone	≈20 gph	
	21	87		135'	50'	120'	?	4'	shale & sandstone	3/4 gpm	
	21	88		125'	15'	35' & 110'	?	5'	shale & sandstone	3 gpm	
	21	89		110'	6'	30' & 95'	?	7'	" "	10 gpm	
	21	90		120'	+	80 : 115'	?	10'	" "	10 gpm	
	21	91		170	25'	166'	?	8'	" "	20+ gpm	
	21	92		120'	30'	125'	?	6'	sandsone	30+ gpm	SITE. I.D. #1400320
	21	93		85'	8'	40' : 70'	?	6'	shale & sandstone	10 gpm	conglomerate 80'-85'
	21	94		110'	10'	100'	?	6'	" "	8 gpm	
	21	95		110'	4'	55' & 95'	?	4'	clay and shale.	10 gpm	
	21	96		110'	8'	50-75-100'	?	7'	clay and shale	4 gpm	
	21	97		125'	7'	115'	?	7'	sandstone & shale.	2 gpm	
	21	98		130'	6'	120'	?	5'	shale	10 gpm	
	21	99		125'	15'	90' & 115'	?	7'	Sandstone	9 1/2 gpm	
	21	100		100'	15'	60 & 85'	?	6'	sandstone & shale	15 gpm	
	21	102		180'	65'	125 : 170'	?	4'8"	shaley sandstone	5 gpm	
	21	103		215'	25'	205'	?	10'	sandstone & shale	7 gpm	
	21	104		368'		368'		5'	sandstone	1 gpm	* Water bearing Zone - W.B.Z.

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GABRIOLA ISLAND WELL INVENTORY, TABLE NO. 1 - HYDROGEOLOGICAL DATA

WATERSHED	SECTION	WELL No.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO * W.B.Z.	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
Sands	21	69		135'	6'	125'	?	6'	Sandstone - shale	1½ gpm	
	21	70		105'	2'	95'	?	3'	Sandstone	8 gpm	
	21	71		125'	7'	115'	?	7'	Sandstone	5gpm	
	21	72		100'	30'	70 ; 95'	?	5'	shale ; sandstone	1½ gpm	
	21	73		100'	6'	20 ; 94'	?	6'	shale ; sandstone	12 gpm	
	21	74		170'	9'	137 ; 163'	?	5'	shale ; sandstone	1½ gpm	
	21	75		145'	25'	136'	?	8'	" "	3 gpm	
	21	76		100'	5'	15 ; 90	?	7'	layered shale	6 gpm	
	21	77		110'	2'	15 ; 106'	?	7'	clay ; shale	1½ gpm	
	21	78		330'	—	—	?	14'	sandstone	—	
	21	79		150'	5'	6 ; 150'	?	6'	Sandstone	1 gpm.	
	21	80		45'	+	16 ; 30 ; 35	?	8'	Sandstone	30 + gpm	APPEARS TO BE EXCELLENT WELL SHOULD BE SAMPLED FOR QUALITY
	21	81		100'	37'	78'	?	5'	Sandstone	1½ gpm	
	21	82		200'	50'	124 ; 193'	?	7'	Sandstone ; shale	½ gpm	
	21	83		115'	30'	95 ; 105	?	7'	sandstone - shale	10 gpm	
	21	84		130'	25'	15 ; 122'	?	11'	Shale	2½ gpm	
	21	85		265'	+	245 ; 256	?	7'	Sandstone ; shale	12 gpm	

* Water bearing Zone - W.B.Z.

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GABRIOLA ISLAND WELL INVENTORY, TABLE NO. 1 - HYDROGEOLOGICAL DATA

WATERSHED	SECTION	WELL No.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO * W.B.Z.	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
DESCANSO BAY	24	6		166	10	160	20	6	HARD SANDSTONE	1/3 GPM	
		8		160		155 65,140	25	2	BROWN AND BLUE SHALE	1/2 GPM	
		9		120	70	20,90	25	8	SHALE AND SANDSTONE	1/2 GPM	
		12		125	6	115		8	SANDSTONE AND SHALE IN LAYERS	5 GPM	
		15		145	8	18,120	27	5	SHALE AND SANDSTONE	1/2 GPM	
		19		65	20	55		4	SANDSTONE AND SHALE IN LAYERS	3 1/2 GPM	
											* Water bearing Zone - W.B.Z.

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GABRIOLA ISLAND WELL INVENTORY, TABLE NO. 1 - HYDROGEOLOGICAL DATA

WATERSHED	SECTION	WELL NO.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO * W.B.Z.	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
GABRIOLA (4)	6	2		110	50'	61':81	112'	1'10"	Sandstone & shale	3/5 gpm	HACH ANALYSIS DONE SOFT WATER SITE ID 1400292
	6	3		124'	34'	122'	115'	9'	Sandstone : shale	7 gpm	
	6	4		80'	42'	43, 72, 76	125'	13'5"	Sandstone	7 4 gpm	SITE # 1400291
	6	5		275'	+10'		120'		Sandstone w/shale	75 US gpm AI	OBSERVATION WELL - COMPLETE P.T. & Chem. 72-5
	6	6		65	40'		102'		Sandstone	5 gpm	
	6	7		90'	12'	22:81'	?	14'	Sandstone	9 gpm	
	6	8									
	6	9		125'	30'	80:115'	?	11'	Sandstone & shale	12 gpm	
	6	10		140'	55'	58:110'	?	2'	Sandstone : shale	3 gpm	" "
	6	11		80'	15'	60:70'	?	14'	Sandstone	6 gpm	
	7	1		30'	?	? 61'	165'	?	"	?	HACH ANALYSIS DONE 1400289
	7	3		74'	16'		143'	?	Sandstone : shale	2 4/5 gpm	HACH ANALYSIS DONE
	7	4		102'	15'	80':95'	145'	5'	Sandstone	2 1/2 gpm	" " "
	7	5		55'	9'	44'		8'	Sandstone	12 1/2 gpm	
	16	1		275'	29'		210'	10'	Sandstone	3 gpm	OBSERVATION WELL 72-4 - 1400061
	17	1		95'	3'	75'	130'	?	Sandstone	3 gpm	
	17	2	12'		5'		130'	?	Till	good	

* Water bearing Zone - W.B.Z.

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GABRIOLA ISLAND WELL INVENTORY, TABLE NO. 1 - HYDROGEOLOGICAL DATA

WATERSHED	SECTION	WELL No.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO * W.B.Z.	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
GABRIOLA	17	3		30	5'		173	?	Sandstone & shale	4 gpm	
	30	1		56	34'	45'		13'	Shale & sandstone	2.5 gpm	#1400306 + HACH ANALYSIS
	30	2		100'		9', 50', 65', 100'	?	6'	Sandstone & shale	16 gpm	
	30	3		100'	6'	16', 65', 100'	?	?	Sandstone	20 gpm	
	30	4		150'	37'	70', 110-150'	?	?	Sandstone	7 gpm	
	30	5		150'	20'	25', 80'	?	9'	Sandstone & shale	4 gpm	
	8	1		99'	?	?		4'	Sandstone & shale	5 gpm	

* Water bearing Zone - W.B.Z.

DEC. 1977

GABRIOLA ISLAND WELL INVENTORY, TABLE NO. 1 - HYDROGEOLOGICAL DATA

WATERSHED	SECTION	WELL NO.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO * W.B.Z.	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
Silva Bay	5	1		200'	50'	200'	80'	?	Bedrock.	20 gpm	SITE ID 1400290
(5)	5	2		78'	32'	27 & 77'		?	Sandstone	7 gpm	
	5	3		77'	25'	?	50'	?	Sandstone & shale	5 gpm	
	5	4		67'	16'	39-48-65'		?	Shale & sandstone	1 4/5 gpm	
	5	6	9		low	?	70'	?	Sandstone	→	good supply & quality reported.
	5	7		122'	28'	16 & 75	30'	?	Sandstone	2 gpm	
	5	8		120'	?	?	95'	7'	Sandstone & shale	18 gpm	
	5	9		120'	42'	94 & 118'	30'	?	Sandstone	2.3 gpm	HACH DONE
	5	10		70'	32'				Sandstone	5 gpm	HACH " cl. 900 ppm.
	5	11		104'	78'	?	70'	?	Sandstone	5 gpm	bad supply?
	5	12		40'	16'	27'	17'	4'	Sandstone	5 gpm	salt?
	5	13		60'	8'	56 & 60'	20'	12'	Sandstone	20 gpm	
	5	14		68'	14'	51 & 64'	35'	13' 4"	Sandstone	3 gpm	Hach Analysis done
	5	15		70'	32'	54'	75'	?	Sandstone	2.6 gpm	SITE ID 1400295 Hach done
	5	16		63'	31'	55 & 63'	80'	?	Sandstone & shale	1.2 gpm	Hach done
	5	17		77'	44'	72'	55'	12'	Sandstone	8 gpm	

* Water bearing zone - W.B.Z.

DEC. 1977

GABRIOLA ISLAND WELL INVENTORY, TABLE NO. 1 - HYDROGEOLOGICAL DATA

WATERSHED	SECTION	WELL NO.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO * W.B.Z.	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
Silva Bay	5	18	16'		?	?	95'	?	TILL	?	good supply reported
	5	19		75'	25'	25 ; 70'	90'	4'	Sandstone & shale	6gpm	
	5	20		60'	24'		20'	?	Sandstone	4gpm	
	5	21		182'	65'	91, 124, 180' 172	55'	?	Sandstone	4 gpm	
	5	22		66'	25'	64'	80'	5'6"	Sandstone	3gpm	
	5	23		61'	18'	12 ; 59'	75'	4'2"	Sandstone	5½gpm	
	5	24		148'	20'	28 ; 138 ; 148'	30'	?	Sandstone ; shale	2gpm	
	5	25		60'	30'	55' ?	100'	5'	Shale	2.5gpm	HACH ANALYSIS DONE
	5	26		60'	9'	53'	110'	?	Sandstone	1gpm	
	5	27		100'	15'	35 ; 68 ; 92'	75'	2'	Sandstone	1⅓gpm	
	5	28		70'	33'	64'	30'	7'	Shale	4gpm	Hach analysis done Cl 1050 ppm ✓
	5	29		74'	35'	17 ; 65'	50'	?	Sandstone	5gpm	
	5	30		110	40'		50'	11'	Sandstone	5gpm	HACH ANALYSIS DONE
	5	31		65'	6'	55'	25'	10'	Sandstone	4gpm	
	5	32		85'	30'	75 ; 85'	85'	5½'	Shale and Sandstone	3½ gpm	HACH ANALYSIS DONE
	5	33		80'	30'	50 ; 60'	80'	5'	Sandstone & clay	1½gpm	
	5	34		60'	8'	23 ; 60'	30'	9'	Conglomerate	2½gpm	not being used

* Water bearing Zone. - W.B.Z.

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GABRIOLA ISLAND WELL INVENTORY, TABLE NO. 1 - HYDROGEOLOGICAL DATA

WATERSHED	SECTION	WELL No.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO W.B.Z.*	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
Sands	22	1	11'		2'		50'		TILL		
	22	2		65'	4'	26 & 55'		16'	shale & sandstone	7 gpm	
	22	3	15'		8'		37'		sandstone		POOR SUPPLY
	22	4		117'	57'		200'	10'	shaley sandstone	1½ gpm	
	22	5		35'	13'	24'	11'	9'4"	sandstone & shale	1½ gpm	1400302
	22	6	14'		10'	?	37	?	sandstone	?	POOR SUPPLY
	22	7	27'		20'	?	37'	?	TILL	?	TILL
	22	8									
	22	9		124'	20'	112'	69'	20'	Sandstone	40 gph SUPPLYS 3 HOUSES	
	22	10									
	22	11									
	22	12	15		SURFACE	?	30'	?	Sandstone	good SUPPLY	1400304
	22	13		120'	4'	110'	31'	?	Sandstone	0.8 gpm	NOT BEING USED
	22	14	15'		12'	10'	24'	?	Sandstone	->	good SUPPLY
	22	15	17'		?	?	26'	?	" "	->	good SUPPLY
	22	16		215'		44'	15'	?	Sandstone	8 gph ->	POOR SUPPLY - SULPHUR
	22	17	14'		11'		34'	?	Sandstone	GOOD SUPPLY	

* Water bearing Zone - W.B.Z.

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GABRIOLA ISLAND WELL INVENTORY, TABLE NO. 1 - HYDROGEOLOGICAL DATA

WATERSHED	SECTION	WELL No.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO * W.B.Z.	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
Sands	22	18	17'		10'	?	32'	?	Sandstone	good supply	1400312
	22	19									
	22	20		212'	21'			4'9"	Sandstone		
	22	21		140'	34'	125'	10'	3'	shale	1gpm	-
	22	22		209'	?	105'	45'	4'	sandstone	1gph	poor supply
	22	23		150'	?	?	50'	8'	sandstone	→	adequate supply
	22	24		90'	3'	87'	45'	4'2"	shaley sandstone	1½ gpm	
	22	25		56'	20'	52'	10'	3'	shaley sandstone	4gpm	
	22	26		200'	6'	112', 142', 185'	45'	9'5"	sandstone	1gpm	
	22	27		130'	10'	120 & 126'	150'	4'	sandstone & shale	9gpm	not being used
	22	28		93'	30'	75'	30'	3'	sandstone & shale	1gpm	
	22	29		70'	12'	20 & 65'	50'	4'	sandstone	4gpm	
	22	30		137'	+	137'	45'	12'	" "	?	1400303
	22	31		87'	0	78'	100'	15'	" "	10gpm	Hach analysis done
	22	32		129'	20'	125'	35'	4'	" "	4gpm	Salt water (HACH)
	22	33		70'	6'	40 & 60'	180'	7'	Sandstone & shale	25gpm.	
	22	34		80'	25'	50 & 70'	190'	19'	Layered shale	4gpm	

* Water bearing Zone - W.B.Z.

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GABRIOLA ISLAND WELL INVENTORY, TABLE NO. 1 - HYDROGEOLOGICAL DATA

WATERSHED	SECTION	WELL No.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO * W.B.Z.	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
Sands	22	35		165'	SURFACE	120' ? 160'	200'	5'	Sandstone	3 gpm	
	22	36		72	6'	30' ? 65'	250'	12½'	Sandstone / shale	20 gpm	
	22	37		312'	+1'	307'	50'	?	Sandstone w/shale	3 gpm	Flows @ .4 gpm
	22	38	17'		8'	?	45'	?	TILL	?	HACH ANALYSIS DONE SITE # 1400308
	22	39	20'		5'	?	45'	?	TILL	GOOD SUPPLY	
	22	40									
	22	41		175'	138'	160'	?	5'	Sandstone / shale	2 gpm	
	22	42		120'	5'	112'	?	5'	sandstone & shale	6 gpm	
	22	43	18		?		13'	?	TILL	?	Well not in use
	22	44									
	22	45		144'	5'	130'	?	8'		6 gpm	
	22	46		120'	54'	115'	?	22'	sandstone	15 gpm	
	22	47		90'	54'	81'	?	32'	sandstone	5 gpm	
	22	48	8'		?	?	?	?		?	SITE ID 1400318
	22	49									
	22	50		155'		145	?	5'	shale	¾ gpm	
	22	51		140'	5'	132'	?	5'	shale & sandstone	1½ gpm	

* Water bearing Zone - W.B.Z.

GABRIOLA ISLAND WELL INVENTORY, TABLE NO. 1 - HYDROGEOLOGICAL DATA

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WATERSHED	SECTION	WELL No.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO W.B.Z. *	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
Sands	22	52		95'	30'	85'	?	20'	SHALE	4 gpm	
	22	53		145'	48'	134'	?	17'	shale	10 gpm	
	22	55		90'	15'	40:80'	?	8'	shale	15½ gpm	
	22	57		287'		265'	?	13'	sandstone	2 gpm	
	24	3		220'	30'		30'	?	.?	?	
	24	4									
	24	5		280'	5'	50'	10'	5'	?	1 gpM.	HACH ANALYSIS - HIGH CHLORIDE.
	24	7		215'	16'	?	15'	4'	sandstone & shale	40 gpd	
	24	10		159'	90'	135'	?	5'	shale	0.08 gpm	
	24	11		45'	5'	7'	?	6'	sandstone	15 gpm	
	24	13		115'	5'	15'	?	6'	sandstone & shale	2+ gpm	
	24	14		220'	20'	185'	?	5'	sandstone	½ gpm	
	24	16		323'	?	313'	25'	2'	Sandstone & shale	2 gph	
	24	17		123'	25'	70:110'	?	6'	Sandstone & shale	½ gpm	
	24	18		125'	120'	?	?	5'	sandstone	2½ gpm	

* Water bearing Zone - W.B.Z.

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GABRIOLA ISLAND WELL INVENTORY, TABLE No. 1 - HYDROGEOLOGICAL DATA

WATERSHED	SECTION	WELL No.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO * W.B.Z.	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
LOCK BAY	14	1	12		9		340		BEDROCK	GOOD	
(2)		2		37	17	17 35	340	7	SANDSTONE AND SHALE	9 GPM	1400286
		3		325	12.89			10'	SANDSTONE AND SHALE	US 10 GPM	1400064 TEST WELL 72-1
		4		130	8	95		8	CLAY AND SHALE	3 GPM	
	15	1		85	12	80	300±	7	SHALE	5½ GPM	1400285
		2		50	13.75	25-45	325	5	SANDSTONE AND SHALE	6 GPM	
		3		65	5	10		6	SANDSTONE AND SHALE	20 GPM	
		4		110	20	53-102		8	SANDSTONE	2¾ GPM	
		5		70	20	50-65		13	SANDSTONE AND CLAY	20½ GPM	
	18	1	14		12		30		BEDROCK	POOR	
		2		95			325			1½ GPM	
		3		100	10	80-100	230	8	SANDSTONE AND SHALE	1½ GPM	
		4		65	3	9,30,60	230	4	SANDSTONE AND SHALE	20 GPM	
		5a		112	30	67,110	30	15	SHALE	10-15 GPM	1400311 - HACH
		5b		110	6				SHALE	DRY	WAS 10 GPM - HAS GONE DRY
		6		60	7	56	50	14	SHALE	10 GPM	
		7		160	?	150	270	5	CLAY AND SHALE	¼ GPM	

* Water bearing Zone. - W.B.Z.

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GABRIOLA ISLAND WELL INVENTORY, TABLE No. 1 - HYDROGEOLOGICAL DATA

WATERSHED	SECTION	WELL No.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO * W.B.Z.	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
OCK BAY	18	8		55	12	30	275	15	?	5-6 GPM	
		9		80	6	30, 70	275	9	SANDSTONE, CLAY AND SHALE	10 GPM	
		10		85			280	10		8-10 GPM	140 1145
		11		90	8	30, 75, 80	270	8	SANDSTONE + CONGLOMERATE	2½ GPM	
		12		90	8	75	270	4	SANDSTONE	1½ GPM	
		13		27	8	19, 27	50	12	CLAY AND SHALE IN LAYERS	20 GPM	
		14		32	10	20, 32	30	10	CLAY AND SHALE IN LAYERS	30 GPM	
		15		90	13	30, 76	75	17	CLAY AND SHALE IN LAYERS	1 GPM	
		16		50	6	25 35, 43	50	14	BLUE CLAY AND SHALE	10 GPM	
		17		25	10	17 20, 25	30	10	SANDSTONE	15-20 GPM	
		18		36	6	24	30	12	SHALE AND SANDSTONE	6 GPM	
		19		35	12		30	14	BLUE SHALE AND BLUE CLAY	6 GPM.	HACH
		20		75	20	65, 75	325	6	CLAY AND SANDSTONE	2½ GPM	
		21		40	32	20	60	10		7 GPM	
		22		50	12	35, 50	30	19	CLAY + SHALE	1½ GPM	
		23		40	10	30, 35	30	12	BLUE CLAY	4½ GPM	
		24		40	6	25-30	25	13	CLAY AND SHALE	23½ GPM ?	

* Water bearing Zone - W.B.Z.

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GABRIOLA ISLAND WELL INVENTORY, TABLE NO. 1 - HYDROGEOLOGICAL DATA

WATERSHED	SECTION	WELL No.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO * W.B.Z.	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
LOCK BAY	18	25		35	8	24,35	25	11	CLAY + SHALE	50 GPM	
		26		75	24	64,70		9	SANDSTONE	12 GPM	
		27		40	10	30		18	CLAY + SHALE	12 GPM	
		28		130	30	40-130		10	LAYERED SHALE + CLAY	2 GPM	
		29		65	12	58		10	BLUE SHALE	2½ GPM	
		31		125	90	125		7	LAYERED SHALE AND SANDSTONE	5 GPM	
		32		160	?	151		11	LAYERED BLUE CLAY SHALE +	1/3 GPM	
		33		155	14	70,147		6	BLUE CLAY + BLUE SHALE	3 GPM	
		34		250	60	200		5	BLUE CLAY + SANDSTONE	4 GPH	
		35		60	4	15,54		15	BLUE CLAY + BLUE SHALE	25 GPM	
		36		60	8	22,49		17	BLUE CLAY + BLUE SHALE	20 GPM	
		37		55	5	22,49		16	BLUE SHALE + BLUE CLAY	12 GPM	
		38		130	30	121		7½	BLUE SHALE + BLUE CLAY	12 GPM	
		39		125	7	115		6	BLUE SHALE	5 GPM	
		40.		94	16	85		7	BLUE SHALE	6 GPM	
											* Water bearing Zone - W.B.Z.

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GABRIOLA ISLAND WELL INVENTORY, TABLE NO. 1 - HYDROGEOLOGICAL DATA

WATERSHED	SECTION	WELL No.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO * W.B.Z.	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
LOCK BAY	18	42		155		147		5'	BLUE SHALE	2 GPM	
		43		100	35	75,90		7	SANDSTONE AND SHALE IN LAYERS	10½ GPM	
		44		80	15	30,65 75,78		5	SANDSTONE AND SHALE IN LAYERS	26½ GPM	
		45		130	15	16,119		9	BLUE SHALE	5 GPM	
		46		105	4	4,95		3½	SANDSTONE AND SHALE IN LAYERS	5½ GPM	
		47		75	7	65		28	BLUE SHALE	12 GPM	
		48		70	8	40,60		20	SHALE AND CLAY IN LAYERS	15 GPM	
		49		45	15	38,45		14	SHALE AND CLAY IN LAYERS	40 GPM	
		50		125	50	115,125		4	SHALE AND SANDSTONE IN LAYERS	12 GPM	
		51		235	75	35,219		14	BLUE SHALE	4 GPM	
		52		75	12	30,65		13	BLUE CLAY AND SHALE	11 GPM	1400379
		53		80	20	58,74		6	SANDSTONE AND BLUE CLAY	3 GPM	
		54		120	15	90,110		8	SANDSTONE	8 GPM	
		55		95	40	60		3	SHALE AND SANDSTONE (LAYERS)	½ GPM	
		56		90	30	45		12	BROWN SANDSTONE BLUE CLAY ?	3 GPM	
		57		40	2	15,30		9	SANDSTONE	7 GPM	
		58		95	50	85		11	GREY SANDSTONE	12 GPM	

* Water bearing Zone - W.B.Z.

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GABRIOLA ISLAND WELL INVENTORY, TABLE No. 1 - HYDROGEOLOGICAL DATA

WATERSHED	SECTION	WELL No.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO W.B.Z. *	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
LOCK BAY	18	59			4?			14		10 GPM	
	19	1		120	21	70,112	200	10'9"	SANDSTONE	2.1 GPM	
		1a		192					SHALE AND SANDSTONE		DRY HOLE HACH
		5		74	37	63	200	6	HARD BLACK SHALE	2½ GPM	
		9		100	5	45		12	BLUE SHALE	6 GPM	
		10		130	15	70,120		12	SANDSTONE AND SHALE	3 GPM	
		11		25		22		9	SANDSTONE	10 GPH	
	22	40		105	12	50,95		10	BLUE SHALE	3 GPM	
		14		325	10.8		120	10	SANDSTONE	24 GPM US	1400063 TEST WELL 72-5
		49		125	4	4,120		4	SANDSTONE & SHALE IN LAYERS	8 GPM	
		54		155	85	145		5	DARK GREY SANDSTONE	¼ GPM	
		56		300	-	140 260,285		10	BLUE CLAY	8 GPM	
	23	1		25		15	46		SANDSTONE	POOR	
		2		100	10	60,75	100	4	CLAY & SHALE	2 GPM	
		3		125	10	50,110,115		5	SANDSTONE & SHALE IN LAYERS	15 GPM	
		7		285	95			16	SHALE AND SANDSTONE	1 GPH	
	31	1		40	12	35,40	30	22	BLUE CLAY & BLUE SHALE	12 GPM	

* Water bearing Zone - W.B.Z.

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GABRIOLA ISLAND WELL INVENTORY, TABLE NO. 1 - HYDROGEOLOGICAL DATA

WATERSHED	SECTION	WELL NO.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO * W.B.Z.	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
LOCK BAY	31	2		50	22	45			SHALE	7 GPM	
		3		65	23	27,41,55	15	21'6"	SHALE	5 GPM	
		4		50	1½		10	10	SHALE	10 GPM	
		5		60	12		10	17'6"	SHALE	6 GPM	
		6		55	12	28,51	15	14	SHALE	10 GPM	
		7		53	23	26,49	15	21	SHALE	12½ GPM	
		8		50	15	20,45	10	18	CLAY & SHALE	5 GPM	
		9		45	6	22,40	30	10	CLAY & SHALE	16 GPM	
		10		70			10				
		11	22		OVER FLOWS IN WINTER		15				
		12		30	2	25	30	13	BLUE CLAY & BLUE SHALE	13 GPM	
		13		40	10	27,34	10	14	CLAY AND SHALE	6½ GPM	
		14		40	12	26,33	25	10	CLAY AND SHALE	25 GPM	HACH Cl ≈ 30 ppm
		15		70			25				
		16		40	8	18,35	30	12	BLUE CLAY AND SHALE	6 GPM	
		17		40	8	28	25	16	CLAY & SHALE	30 GPM	
		18		35			30			7 GPM	

* Water bearing Zone - W.B.Z.

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GABRIOLA ISLAND WELL INVENTORY, TABLE NO. 1 - HYDROGEOLOGICAL DATA

WATERSHED	SECTION	WELL No.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO * W.B.Z.	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
LOCK BAY	31	19		40	12	20,32	35	15	CLAY & SHALE	25 GPM	
		20		45	12	40	30	13	BLUE SHALE	10 GPM	
		21		65	8.	30 55	48	12	CLAY & SHALE	3½ GPM	
		22		40	8	25,35	35	14	SANDSTONE & BLUE CLAY IN LAYERS	11 GPM	HACH
		23		75			30	12	BLUE CLAY & SHALE		DEEPENED FROM 40'-75' IN 1971
		24		60	8	50	20	15	CLAY & SHALE	2½ GPM	
		25		50	7	24	20	20	SHALE	30 GPM	HACH
		26		40	4	25,32	30	15	CLAY & SHALE	30 GPM	
		27		40	10	32	15	15	CLAY & SHALE	6 GPM	
		28		40	10	27,31,40	15	15	CLAY & SHALE IN LAYERS	24 GPM	
		29		45	(?) 7.5	17,38	20	15	SHALE AND SANDSTONE	20 GPM	
		30		40	12	25,40	10	18	CLAY	6½ GPM	
		31		40	1	25,35	15	15	SANDSTONE AND SHALE	4 GPM	
		32		75	8	17,26	15	15	BLUE SHALE	2 GPM	HACH
		33		40	12	35,40	25	26	CLAY & SHALE	4½ GPM	
		34		40		28,30	45	14	BLUE SHALE & S.S IN LAYERS	20 GPM	HACH
		35		75		26,45	30	10	BLUE SHALE	3 GPM	

* Water bearing Zone - W.B.Z.

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GABRIOLA ISLAND WELL INVENTORY, TABLE No. 1 - HYDROGEOLOGICAL DATA

WATERSHED	SECTION	WELL No.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO W.B.Z.*	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
LOCK BAY	31	36		60	8	50,60	15	12	CLAY & SHALE	8 GPM	
		37		26			125	22			
		38		75	25	15,30,75	60	30	LIMESTONE AND SHALE	14 GPM	HACH cl 50 ppm
		39		40	10	20,40	50	19	CLAY & SHALE IN LAYERS	10 GPM	
		40		40	10	25,35		15	CLAY & SHALE	4.5 GPM	
		41		52		24,48		14	SHALE	3 GPM	
		42		40	10	26,30,35		15 1/2	CLAY & SHALE IN LAYERS		
		43		47	6	44		14	SHALE	5 GPM	
		44		50	8	42		15	BLUE SHALE	11 GPM	
		45		50	25	44,50		19	SHALE & CLAY IN LAYERS	10 GPM	
		46		40	2	32		20	BLUE CLAY	12 GPM	
		47		50	25	40,50		14	BLUE CLAY & BLUE SHALE	2 GPM	
		48		40	10	30,35		15	SHALE	9 GPM	
		49		50	10	18,30,45		19	BLUE SHALE	20 GPM	
		50		30	5	20		15	BLUE CLAY & SHALE IN LAYERS	15 GPM	
		51		40	12	30,35		15	SHALE & CLAY IN LAYERS	25 GPM	
		52		35	12	22		20	SHALE & CLAY IN LAYERS	5 GPM	

* Water bearing Zone - W.B.Z.

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GABRIOLA ISLAND WELL INVENTORY, TABLE NO. 1 - HYDROGEOLOGICAL DATA.

WATERSHED	SECTION	WELL No.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO * W.B.Z.	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
COCK BAY	31	53		60	15	55		3	SAND VERY HARD STONE	7 GPM	
		54		90	12	65,80,90		5	BLUE CLAY & BLUE SHALE	2 GPM	
		55		150	60	144		5	BLUE CLAY & SHALE IN LAYERS	.5 GPM	
		56		70	6	62		7	SHALE & SAND STONE IN LAYERS	1.5 GPM	
		57		60	15	37,54		20	BLUE SHALE	9 GPM	
		58		40	15	23,32		14	BLUE CLAY & BLUE SHALE	17 GPM	
		59		80	20	55,74		16	BLUE SHALE	1½ GPM	
		60		50	24	44		22	BLUE SHALE	11 GPM	
		61		45	12	37		16	BLUE SHALE	12 GPM	
		62		80	15	42,64,73		21	BLUE SHALE	5 GPM	
		63		75	20	43,69		16	BLUE SHALE	15 GPM	
		64		100	15	27,94		24	BLUE SHALE	3½ GPM	
		65		75	10	47,68		27	BLUE SHALE	5 GPM	
		66		55	20	41,49		14	BLUE SHALE	25 GPM	
		67		80	14	57,80		12	BLUE SHALE & BLUE CLAY	1 GPM	
		68		25							1401146
		69		45	7	25,37		20	BLUE SHALE	20 GPM	

* Water bearing Zone - W.B.Z.

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GABRIOLA ISLAND WELL INVENTORY, TABLE NO. 1 - HYDROGEOLOGICAL DATA

WATERSHED	SECTION	WELL No.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO * W.B.Z.	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
ICK BAY	31	70		45	6	22,39		21'6"	SHALE	5½ GPM	
		71		45	12	33,37		21	BLUE CLAY AND BLUE CLAY IN LAYERS	7 GPM	
		72		60	10	20,45,50		18	SHALE & CLAY IN LAYERS	16 GPM	
		73		45	8	25,38		23	BLUE SHALE	12 GPM	
		74		50	8	45		18	BLUE SHALE	15 GPM	
		75		45	5	25		24	BLUE SHALE	4 GPM	
		76		50	8	20,40		16	CLAY & SHALE IN LAYERS	21 GPM	
		77		75		75		15		2 GPM	
		78		70	20	50,60,70		5	HARD SANDSTONE	5 GPM	
		79		55	14	35,45		17	CLAY AND SHALE IN LAYERS	12 GPM	
		80		65	20	55		28	SHALE & CLAY IN LAYERS	1½ GPM	
		81		95	10	80		4½	SANDSTONE	5 GPM	
		82		75		65		27	BLUE SHALE	2½ GPM	
		83		90	5	20,80		13	SANDSTONE AND SHALE IN LAYERS	10 GPM	
		84		60	9	45,52		12	BLUE SHALE	15 GPM	
		85		115	3	105		6	BLUE SHALE	8 GPM	
		86		91	8	50,80		10	SANDSTONE	1½ GPM	

* Water bearing Zone - W.B.Z.

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GABRIOLA ISLAND WELL INVENTORY, TABLE No. 1 - HYDROGEOLOGICAL DATA

WATERSHED	SECTION	WELL No.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO * W.B.Z.	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
LOCK BAY	31	87		55	19	45		13	CLAY & SHALE IN LAYERS	6 GPM	
		88		60	15	39		16'4"	SHALE	1 GPM	
		89		90	25	38		21'10"	SHALE	3/4 GPM	
		90		65	12	55		21'2"	SHALE	10 GPM	

* Water bearing Zone - W.B.Z.

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GABRIOLA ISLAND WELL INVENTORY, TABLE NO. 1 : HYDROGEOLOGICAL DATA

WATERSHED	SECTION	WELL No.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO * W.B.Z.	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
DEXANSO BAY	12	1	8		4		280		SANDSTONE	GOOD SUPPLY	
(3)		2		60	30	55	275	2		10 GPM	HACH ANALYSIS
		3		50	20	20-40	275	30"	SHALE AND SANDSTONE	12 GPM	
		7		90	15	75, 82	3.25	4 1/2	SANDSTONE AND CONGLOMERATE	20 GPM	
		21		125	6	50 80, 125		10	SANDSTONE AND SHALE IN LAYERS	50 GPM	
		22		200				5	SANDSTONE, BLUE SHALE & CLAY		DRY WELL
		26		100	9	68		10	VERY HARD SANDSTONE	1/2 GPM	
		29		85	13	74		5	BLUE SANDSTONE	4 GPM	
		36		100	6	15, 230		7	BLUE CLAY AND SHALE	10 GPM	
		40		135	5	121		10	HARD SANDSTONE	12 GPM	
		47		125	10	115		9	HARD SANDSTONE	12 GPM	
		48		175	40	80, 165		4	GREY SANDSTONE	1 GPM	
		49		135	20	125		6	BLUE SHALE	20 GPM	
		50		92	15	75		6	SHALE AND SANDSTONE IN LAYERS	10 GPM	
	13	1		60	6	10, 55	250	5 1/2	BLUE SHALE AND SANDSTONE IN LAYERS	20 GPM	
		4		90	12	65, 85	250	2	SHALE	20 GPM	
		5		40	10	22, 33	250	2	SANDSTONE	30 GPM	

* Water bearing Zone - W.B.Z.

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GABRIOLA ISLAND WELL INVENTORY, TABLE NO. 1 - HYDROGEOLOGICAL DATA

WATERSHED	SECTION	WELL NO.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO * W.B.Z.	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
DESCANSO BAY	13	6		60	15	15 52,60		8	VERY HARD SANDSTONE AND BLUE SHALE	14½ GPM	
		9		90	15	82		6	BLUE SHALE	15 GPM	
		10		40	10	30,32		7	SHALE AND SANDSTONE IN LAYERS	30 GPM	
		11		90	2	18		21	OVERBURDEN ?	8 GPM	
		12		80	9	17		3	BLUE SANDSTONE GRAVEL	25 GPM	
		13		80	12	40,60,80		2½	SHALE AND SANDSTONE IN LAYERS	20 GPM	
		14		65	20	50		4	SANDSTONE	10 GPM	
		15		90	12	25		8	GREY SANDSTONE AND HARD BLUE SHALE IN LAYERS	12 GPM	
		16		125	16	65,110		4	SANDSTONE	20 GPH	
		18		165	10	155		14	SHALEY SANDSTONE	2½ GPM	
		19		85	3	16		7	BROWN SANDSTONE	15 GPM	
	18	30		50	12	43		10	SHALE AND CLAY IN LAYERS	30 GPM	
		41		165	8	155		10	BLUE SHALE	8 GPM	
	19	2		30	15		320		BEDROCK	GOOD SUPPLY	
		3		78	51		300		SANDSTONE		1400066
		4		70	38	55	275	5'6"	SANDSTONE	1½ GPM	
		6		70	4	30,65	350	12'	HARD SANDSTONE	5½ GPM	
											* Water bearing Zone - W.B.Z.

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GABRIOLA ISLAND WELL INVENTORY, TABLE No. 1 - HYDROGEOLOGICAL DATA

WATERSHED	SECTION	WELL No.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO W.B.Z. *	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
DESCANSO BAY	19	7		250	65.37		305	10	SANDSTONE	72 US GPM	TEST HOLE 72-3 Safe prod. [illegible] 35-40 [illegible] 1400067
		8		80	25	45,75		2	SHALE	5½ GPM	
	20	1	20		16		26		TILL	GOOD SUPPLY	
		3	SPRING				173		SANDSTONE	GOOD SUPPLY	1400300
		4		238	50				GREY SANDSTONE	½ GPM	
		6		205			240	1½	SHALE AND SANDSTONE		DRY HOLE
		7		75			230	4½	BLUE SHALE AND SANDSTONE		DRY HOLE
		8		212			225	3	SANDSTONE		DRY HOLE
		9		250		230	220	2	SHALE AND SANDSTONE	4 GPH	
		10		45	9	18,38	250	5	HARD SANDSTONE	3½ GPM	1400299
		11		70	8	15,60	230	4	SANDSTONE	15 GPM	
		12	12		9		230				
		13		81	35	70	250	18	SHALE	1½ GPM	HACH ANALYSIS
		14		70	4	10,60	250	6	SANDSTONE	3/4 GPM	

* Water bearing Zone - W.B.Z.

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GABRIOLA ISLAND WELL INVENTORY, TABLE NO. 1 - HYDROGEOLOGICAL DATA

WATERSHED	SECTION	WELL No.	WELL DEPTH DUG	WELL DEPTH DRILL	S.W.L.	DEPTH TO * W.B.Z.	WELL HEAD ELEVATION	CASING LENGTH	DESCRIPTION OF MATERIAL	REPORTED YIELD	REMARKS
DESCANSO BAY	20										
		18		105	25	40,90		13	SANDSTONE	1¼ GPM	
		19		145	20	121,145			SANDSTONE	.35 GPM	
		20		537	140			4'8"	SHALE AND SANDSTONE	10 GPM	
		23		135	30-40	125		18	GREY SHALE	12 GPM	
		24		195		185		4	GREY SANDSTONE AND BLUE SHALE	½ GPM	
		25		205	12	195		8	BLUE CLAY AND SHALE IN LAYERS	2 GPM	
	21	42		100		80	130		SHALE AND SANDSTONE	7 GPM	
		43		80	15	30,65	100	4	HARD SANDSTONE & SHALE IN LAYERS	12 GPM	
		101		220	60	216		6	BLUE SHALE	2 GPM	
	24	1		50	6 (?)	12,50	10	4'3"	SHALE	3/8 GPM	
		2		157			14	14'0"	SANDSTONE		DRY HOLE
		4		195	31		25	4½	SANDSTONE	5 GPM	
											* Water bearing Zone - W.B.Z.