BRITISH COLUMBIA

Environmental Appeal Board

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APPEAL NO. 2000-HEA-019

In the matter of an appeal under section 8 of the Health Act, R.S.B.C. 1996, c. 179.

BETWEEN:	Dean Ellis	**APPELLANT**
AND:	Environmental Health Officer	**RESPONDENT**
BEFORE:	A Panel of the Environmental Appeal Board Alan Andison, Chair	
DATE OF HEARING:	November 16, 2000, and concluded in writing on December 18, 2000.	
PLACE OF HEARING:	Courtenay, B.C.	
APPEARING:	For the Appellant: Dean Ellis For the Respondent: Greg Vos	

APPEAL

This is an appeal by Dean Ellis of the June 15, 2000 decision of Dwayne Stroh, an Environmental Health Officer ("EHO") with the Upper Island/Central Coast Community Health Services Society (the "Health Services Society"), refusing to issue a permit for a sewage disposal system on Lot 136, Plan 24327, Section 1, Nanaimo District, with a street address of 5095 McLeod Road, Hornby Island (the "Property").

The Environmental Appeal Board has the authority to hear this appeal under section 11 of the *Environment Management Act* and section 8 of the *Health Act*. The Board, or a panel of it, may, after hearing all the evidence decide to vary, rescind or confirm the decision of the EHO.

Mr. Ellis requests that a permit to construct a sewage disposal system be issued.

BACKGROUND

Mr. Ellis purchased the Property in 1999. It is approximately ½ acre in size, measuring 150 feet by 156 feet. On its south side, the Property borders on McLeod Road. A well is located in the northwest corner of the Property, and a small cabin is situated in the middle of the Property. In 2000, Mr. Ellis built a two-bedroom, 1000 square foot house slightly northeast of the cabin. He seeks a permit to construct a

sewage disposal system to serve the house and cabin. These buildings are currently serviced by an "outhouse".

Mr. Ellis has made several attempts to secure a sewage disposal permit for the Property. He first applied for a permit on September 8, 1999. In that application, he proposed the construction of a conventional septic tank system, and indicated that the site contained less than 1.2 metres (4 feet) of native soil. The absorption field was proposed for the southwest corner of the Property, above McLeod Road.

In a letter dated October 15, 1999, David Cherry, an EHO with the Health Services Society, rejected Mr. Ellis' application on the basis of a site investigation on September 23, 1999, where test holes showed signs of a high water table on the site during the wet season. Mr. Cherry stated that before a sewage disposal permit could be issued, it must be shown that the site has 12 inches of undisturbed native soil above the seasonal high water table. He further indicated that any re-evaluation of the site be "held in abeyance" until the winter wet season, when "actual ground water table levels can be more accurately determined."

Staff from the Health Services Society inspected the site again on November 25 and December 13, 1999.

In a letter dated December 16, 1999, Mr. Stroh stated that wet season monitoring showed that there were 12 to 14 inches of native undisturbed soil in the area of the proposed disposal field. There being less than 18 inches of native undisturbed soil, Mr. Stroh concluded that a conventional septic tank or package treatment plant system could not be used. However, Mr. Stroh suggested that, with 12 to 14 inches of "actual useable soil", the site may be suitable for a system using tertiary treatment if Mr. Ellis wished to re-submit his application. Mr. Stroh noted that two such systems had been approved for use in the Upper Island/Central Coast Health Region: the Low Rate Sand Filter and the Glendon Biofilter.

Mr. Stroh also noted several other specific concerns in relation to the Property:

1. The down and side slope ditching is within 50 feet of where the system will be installed;
2. The 'cabin' will also be within 50 feet of the zone of influence;
3. This 'cabin', if not designated as an additional bedroom only, would increase the estimated sewage flow;
4. Raised fields require a minimum setback of 25 feet from property lines, 50 feet from breakout points and 100 feet from wells. These measurements are taken from the nearest trench wall.

In order to address these concerns, Mr. Stroh stated that, among other things, he would require a revised system design from a qualified engineer.

In a letter to Mr. Stroh dated December 24, 1999, Mr. Ellis confirmed that the cabin will only house one bedroom and bathroom, with no kitchen.

Mr. Ellis also retained the services of a professional engineer, Mr. Giff La Rose, to assist in re-applying for a sewage disposal permit.

On April 26, 2000, Mr. Ellis submitted a revised permit application. This application was for a sewage disposal system to serve a two or three bedroom dwelling with 1400 square feet of living space and an estimated daily sewage flow of 250 gallons. The proposed system includes a septic tank, a Cromaglass model CA5 package treatment plant, and 150 feet of drainage pipe. The absorption field was proposed for the same location as previous applications, in the southwest corner of the Property. This application indicates that the depth of soil to the water table in the proposed field area is over 18 inches.

Mr. Stroh inspected the Property on May 10, 2000. At that time, he advised Mr. Ellis that the soil in the proposed site was between 12 and 18 inches deep, and that the issues raised in his letter of December 16, 1999 still needed to be addressed.

In a letter to Mr. Stroh dated May 26, 2000, Mr. Ellis stated that he had retained a professional engineer to re-submit a third permit application. He further stated that he had constructed a new house on the Property.

The professional engineer retained for the third application was Robert A, Davey, P. Eng. He recommended the use of a Biogreen BG2000 package treatment plant with an ultraviolet or chlorine disinfection system for the Property. A system of this design formed the basis of Mr. Ellis' third re-application, submitted on June 7, 2000.

On June 14, 2000, the Health Services Society received a letter from Mr. Ellis stating that, although he had not received a written rejection of his April 26, 2000 application, he presumed that it had been rejected and he wished to appeal.

Mr. Stroh replied in a letter dated June 15, 2000, in which he confirmed that the April 2000 application had not been accepted, and referred to his letter dated December 16, 1999 as the reasons for the rejection. Mr. Stroh also stated that Mr. Ellis had responded to these reasons by saying that he had employed an engineer to make a third application. Mr. Stroh noted that he was awaiting further information from this engineer, Mr. Davey, to assist in evaluating the third application. Finally, Mr. Stroh also provided information on how to file an appeal with the Board.

On June 27, 2000, Mr. Ellis filed an appeal of Mr. Stroh's letter of June 15, 2000 confirming the rejection of the April 26, 2000 application.

On August 28, 2000, Greg Vos, an EHO with the Health Services Society, wrote to the Board to advise that Mr. Ellis' third permit application had been approved, and a sewage disposal permit for the Property had been issued on August 16, 2000.

On August 31, 2000, Mr. Ellis notified the Board that he still wished to pursue his appeal as the approved sewage disposal system is different and more expensive than the system that was rejected.

The merits of the appeal were heard by way of an oral hearing before the Board on November 16, 2000.

After the conclusion of the oral hearing, Mr. Ellis wrote to the Board with additional submissions. The Board then gave the Respondent an opportunity to respond to these comments. The hearing was thus concluded in writing.

Mr. Ellis requests that the Panel issue a sewage disposal permit for the Property based on his application filed on April 26, 2000.

ISSUE

As stated above, in refusing Mr. Ellis' application for a Cromaglass model CA5 package treatment plant system, the EHO adopted the reasons set out in Mr. Stroh's December 16, 1999 letter. Those reasons for refusal relevant to this appeal are reiterated below:

- There is less than 18 inches of native *undisturbed* soil in the absorption field area,
- The down and side slope ditching is within 50 feet of where the system will be installed,
- Raised fields require a minimum setback of 25 feet from property lines, 50 feet from breakout points and 100 feet from wells. These measurements are taken from the nearest trench wall. [emphasis added]

The issue before the Board is whether the decision of the EHO to refuse to issue a sewage disposal system permit, as sought in the April 26, 2000 application, is reasonable in the circumstances. More specifically:

(a) Is there sufficient soil above the water table in the location of the proposed absorption field?
(b) Does the proposed system meet the required setbacks to breakout points, property lines and wells?

RELEVANT LEGISLATION

The site requirements for conventional package treatment plant systems are set out in Schedule 3 to the *Sewage Disposal Regulation*, B. C. Reg. 411/85 (the "*Regulation*"). Section 11 of Schedule 3 establishes the required soil depth for an absorption field.

11. A conventional absorption field shall not be located in an area where an impervious layer of soil or bedrock, or the ground water table, are less than 1.2 m [4 ft.] below the ground before it has been artificially disturbed by placement of fill, excavation or otherwise.

The parties agree that the Property does not have sufficient natural undisturbed soil to permit the installation of a conventional system. Therefore, the application falls under section 7 of the *Regulation* which allows for a reduction of the soil depth:

Alternate methods

7 (1) Where a medical health officer or public health inspector is satisfied that it is impossible for a person to comply with

…

(b) in the case of a conventional package treatment plant, sections 11 …of Schedule 3...

but that the person can comply with *all other provisions* of the appropriate schedule, he may issue a permit to construct under section 3, containing conditions that he considers appropriate to meet the omitted standards *having regard to safeguarding public health*. [Emphasis added]

The On-Site Sewage Disposal Policy of the Ministry of Health (the "Policy") provides guidelines to assist EHOs in exercising their discretion under section 7 of the *Regulation*. The Policy provides the following guidelines with respect to soil depth:

Chapter 6 - Alternate Systems

6.1 Considerations

Soil Depth It is generally accepted by all health jurisdictions throughout North America that a property must have some natural, unsaturated soil above an impervious layer, bedrock or water table to ensure that the on-site sewage disposal system has a comparable life expectancy to that of a conventional system. Most American jurisdictions require a depth of 24 inches.

To meet the requirements of a proposed alternate system, the **natural soil** on the site must be acceptable and to a depth considered adequate to attenuate the effluent and thus prevent ground/perched water contamination and/or result in the creation of a health hazard.

Historically the soil depth requirement in British Columbia has been established as 18 inches. Recent technical information indicates that this requirement may not be sufficient. [emphasis added]

Chapter 1 of the Policy defines "natural soil" as:

Undisturbed soil, native to the lot, not including fill.

Chapter 4 - General Site Assessment

4.4 Breakout Point Setback

Required setback As a condition of permit pursuant to Section 3(5), in order to prevent domestic sewage from reaching the surface of the ground, the setback distance from a sewage disposal system and potential downslope breakout points, such as present or future roadcuts, excavations, an exposed impervious layer in a ditch or a curtain drain, under normal conditions should

> generally not be less than 15.25 metres (50 feet). The following conditions should be considered in determining additional setback distances:
>
> a. soil porosity.
> b. soil depth.
> c. water table (depth to highest seasonal water table).
> …
>
> The Environmental Health Officer may consider reducing this 50 foot minimum setback distance upon receipt of a report from a professional engineer… indicating that the sewage will be attenuated before it leaves the property…

DISCUSSION AND ANALYSIS

Whether the decision of the EHO to refuse to issue a sewage disposal system permit as sought in the April 26, 2000 application is reasonable in the circumstances.

(a) Is there sufficient soil above the water table in the location of the proposed absorption field?

Mr. Ellis states that, after he submitted his first sewage disposal permit application, Mr. Cherry inspected the Property and suggested that all he would need to do for the proposed absorption field site would be to build a ditch around the Property and bring in 36 inches of Denman Island sand. Mr. Ellis states that he subsequently built a ditch around the Property and, later, obtained the sand. However, after Mr. Stroh became the EHO handling Mr. Ellis' application, he told Mr. Ellis that there was not enough "undisturbed" soil on his Property for the proposed system. Mr. Ellis states that the "only incorrect thing I did was disturbing some of the soil where I took the stumps out." However, he points out that "disturbed" is not a defined term in the *Regulation* or the Policy, and maintains that the absorption field has over 18 inches of natural soil.

Mr. Ellis also submits that he has been treated unfairly by Mr. Stroh. He maintains that an absorption field on an adjacent lot, located approximately 50 feet downslope from where he proposes to install his absorption field, was approved even though stumps were removed from that area using the same equipment as was used to remove stumps on Mr. Ellis' Property. However, Mr. Ellis' application was rejected because the soil had been "disturbed". Mr. Ellis argues that this inconsistency in decisions regarding similar sites indicates discriminatory practices by the EHO.

Mr. Ellis provided a copy of a sewage disposal permit issued in 1999 for a system located at 5145 McLeod Road, Hornby Island, which is located adjacent to Mr. Ellis' Property. The approved system includes a Cromaglass CA5 package treatment plant, which is the same package treatment plant that Mr. Ellis proposes to install. Mr. Ellis submits that no inspection for soil depth was done at this site, and that the site was not inspected in the winter. He also provided a copy of a permit issued in February 2000 for a system located at 3070 Shingle Spit Road, Hornby Island, that

includes a Cromaglass CA5 package treatment plant. Mr. Ellis claims that the system was approved despite the fact that there is not 18 inches of soil at this site. However, the application indicates that there is 18-24 inches of soil at the site, with a depth of 18 inches to the water table.

Finally, Mr. Ellis claims that the system which was ultimately approved by the Respondent will cost approximately $15,000 more than the one he wants to install and which is the subject of this appeal. He notes that he has already built a house on his Property, and says that he will continue to use the existing outhouse if he cannot get approval for the system that he wants to install.

In reply, the Respondent submits that sewage disposal permits are site specific, and permits issued for other lots are not relevant to Mr. Ellis' application.

The Respondent also disputes Mr. Ellis' claim regarding the depth of soil on the Property. He refers to Mr. Stroh's letter dated December 16, 1999, which states that wet season monitoring at the Property indicated that there was only 12 to 14 inches of native undisturbed soil in the proposed absorption field area. The Respondent notes that this does not meet the minimum recommended depth of 18 inches set out in section 6.1 of the Policy. The Respondent argues that the top layer of native soil has been disturbed by the extraction of stumps, and should not be considered in calculating the depth of native undisturbed soil.

In support, the Respondent points to Mr. Stroh's field notes from the November 25, 1999 site inspection, which state that "soil that has been moved around on the property [and is] referred to as 'fill' (loamy gravel)" was found in all four test holes, at depths ranging from 8 to 18 inches from the ground surface. Mr. Ellis disputes that he has added 8 to 18 inches of fill.

Mr. Stroh's field notes also indicate that native gravelly loam was found below the fill layer in three of the test holes, followed by a tightly packed layer of silt or silty clay over the water table. In the other test hole, no gravelly loam layer was found above the silt layer. Thus, the thickness of native gravelly loam and silt or silty clay above the water table was 8 inches, 24 inches, 14 inches, and 11 inches in test holes 1 through 4, respectively. However, when the site was re-inspected on December 13, 1999 to determine the high water table, it was determined that there was only 12 to 14 inches of native undisturbed soil above the water table.

The Panel was also provided with a copy of Mr. Cherry's field notes from his site inspection of September 7, 1999. He described the two test holes he observed as containing "cemented" and "mottled" sand or silt starting at a depth of 10 and 6 inches, respectively, which is indicative of a high winter water table.

In addition, the Respondent submits that the proposed system would have insufficient drainage pipe to service a three-bedroom dwelling consisting of the two-bedroom house, plus the one-bedroom cabin. Mr. Ellis' application proposes to use 150 feet of pipe in the absorption field. However, the required length for a package treatment plant discharging into a raised absorption field is 168 feet, according to the Health Services Society's policy SEW012, dated December 15, 1994, which is based on the regulatory specifications for conventional septic tank systems.

The Respondent called Giff La Rose to testify. Mr. La Rose advised that he was hired by Mr. Ellis in December 1999. Mr. La Rose stated that the soils in the area where Mr. Ellis proposed to place his absorption field were not native and had been rendered non-organic. He further advised that there was less than 18 inches of undisturbed soil above the water table and that, during December and January, the water table in some of the test holes was only 10 to 12 inches from the surface of the undisturbed layer.

The Respondent also called Robert A. Davey, the professional engineer who worked with Mr. Ellis in May 2000, to testify. Mr. Davey stated that, based on his observations at the Property, although there was 24 inches of "usable" soil, there was only 12 to 18 inches of undisturbed soil available above the high water table. In a letter to Mr. Ellis dated May 29, 2000, Mr. Davey recommended that Mr. Ellis install a "BIOGREEN BG2000" package treatment plant on the Property. He stated that this plant uses an ultraviolet disinfection process to lower the faecal coliform count in sewage effluent before it reaches the absorption field. He also stated that it is approved by the provincial health authorities for use with raised absorption fields where native soils are limited to 12 inches or more, and a high water table is evident. Mr. Davey stated that this type of plant is necessary for the Property to prevent effluent from entering the water table in the area of the absorption field.

In a letter to Mr. Ellis dated October 10, 2000, Mr. Davey addressed Mr. Ellis' concerns in relation to the Respondent's finding that the top layer of soil had been "disturbed". He stated as follows:

> The initial description of a disturbed ground definition is one in which the natural vegetation has been disturbed by removal or alteration resulting in movement of the soil. This was certainly the case when I viewed the site and although no soils had been imported into the site the top layers were not intact, and the humus layers and original vegetation were missing.

In his testimony, Mr. Davey noted that 36 inches of Denman Island sand has now been placed on the site and, as a result, the site will have to be re-evaluated.

With respect to Mr. Ellis' evidence that systems incorporating the Cromaglass package treatment plant have been approved on neighboring lots, Mr. Davey stated that each lot has to be evaluated independently.

The Panel notes section 11 of Schedule 3 of the *Regulation* provides assistance in determining the intended meaning of the term "disturbed" soil. As noted above, it provides that:

> **11.** A conventional absorption field shall not be located in an area where an impervious layer of soil or bedrock, or the ground water table, are less than 1.2 m [4 ft.] below the ground **before it has been artificially disturbed by placement of fill, excavation or otherwise**. [emphasis added]

This indicates that there are concerns with building absorption fields where processes that artificially disturb the structure or composition of the soil have

occurred, thereby affecting the soil's ability to attenuate sewage effluent through natural biological processes. Excavation is considered to be one such form of disturbance. It is the process of cutting, digging, or scooping soil, and therefore alters the natural structure of the soil. The Panel accepts that the removal of tree roots and other vegetation similarly alter the natural soil structure. The Panel also notes that this type of disturbance was observed at the site by Mr. Davey, as stated in his letter dated October 10, 2000. Furthermore, the Panel notes that Mr. Ellis' own testimony confirms that the top layer of soil at the proposed absorption field site was disturbed by the removal of stumps. Thus, the Panel finds that the top layer of soil at the proposed absorption field site has been artificially disturbed by excavation, and, therefore, cannot be considered in calculating the depth of undisturbed native soil at the site.

Although the EHO has the discretion to determine the minimum depth of undisturbed native soil required at this site, he must consider all of the relevant factors and the legal requirement that a sewage disposal system must adequately protect public health from exposure to sewage effluent. Section 6.1 of the Policy provides the following guidelines to assist EHOs in exercising this discretion:

Soil Depth

> ...
>
> To meet the requirements of a proposed alternate system, the **natural soil** on the site must be acceptable and to a depth considered adequate to attenuate the effluent and thus prevent ground/perched water contamination and/or result in the creation of a health hazard.
>
> Historically the soil depth requirement in British Columbia has been established as 18 inches. Recent technical information indicates that this requirement may not be sufficient. [emphasis added]

Chapter 1 of the Policy defines "natural soil" as:

> Undisturbed soil, native to the lot, not including fill.

The Panel finds that the depth of natural soil on the Property does not meet the minimum of 18 inches of "natural soil", i.e. undisturbed soil native to the lot, as set in chapter 6.1 of the Policy. The Panel accepts the evidence of the Respondent, based on the field inspections by Mr. Cherry and Mr. Stroh, as well as the evidence of Mr. La Rose and Mr. Davey in this regard. Mr. Ellis has provided no technical evidence to dispute this finding.

The Panel notes that the Policy suggests that EHOs may consider reducing the minimum 18 inch depth in certain circumstances, such as where there the lot is a large acreage, the groundwater table is not a factor (i.e. the lateral movement of effluent would be in unsaturated conditions), rainfall levels are low, or the existing soil is ideal for treatment. However, no evidence has been provided in this case to justify reducing the minimum soil depth requirement. The Panel accepts the evidence of the Respondent that there is insufficient depth of native undisturbed soil above the water table at this site to permit the proposed sewage disposal

system. The Panel agrees with the evidence of the Respondent and Mr. Davey that a package treatment plant utilizing a tertiary treatment process is necessary at this site in order to adequately safeguard public health.

Thus, the Panel finds that the Respondent correctly exercised his discretion under section 7(1) of the *Regulation* when he rejected Mr. Ellis' April 2000 application on the ground that there is an insufficient depth of natural soil.

With respect to Mr. Ellis' allegations that the Respondent acted in an unfair or discriminatory manner when considering his application, the Panel finds that there is insufficient evidence to substantiate such claims. In particular, Mr. Ellis' evidence that other properties on Hornby Island were given permits while his was not does not convince the Panel of any unfairness. Each site must be evaluated on its own merits. In this case, the only relevant information is the site specific details of the Ellis Property. The Panel gives little weight to the other permits when considering the merits of Mr. Ellis' application. Any decisions with respect to other properties on Hornby Island or elsewhere are irrelevant to this appeal.

(b) Does the proposed system meet the required setbacks to breakout points, property lines and wells?

The Respondent submits that there are potential breakout points less than 50 feet downslope of the proposed absorption field, contrary to the section 4.4 of the Policy. During his site inspection on November 25, 1999, Mr. Stroh noted that a ditch had been excavated from the house site to the proposed field, "presenting itself as a potential break-out point", while a cabin was located 15 to 20 feet from of the proposed field.

The Panel also heard evidence about the siting of the proposed absorption field and compliance with setback requirements. However, since the Panel has found that the Respondent correctly exercised his discretion in not approving the April 2000 application due to the insufficient depth of natural soil, the issue of setbacks does not need to be addressed.

DECISION

In making this decision, the Panel of the Environmental Appeal Board has considered all the relevant evidence before it, whether or not specifically reiterated here.

The Panel finds that, in denying Mr. Ellis' April 26, 2000 application, the Respondent clearly exercised his discretion in accordance with the *Regulation* and the relevant policy guidelines, and considered the specific characteristics of this site. In addition, the Respondent gave Mr. Ellis a clear indication of what was needed in order to have a permit approved, and gave him several opportunities to resubmit his application. The Panel also notes that, in his letter dated October 15, 1999, Mr. Cherry advised Mr. Ellis to consult an EHO before installing any ditches as improper ditching can create breakout points. Nevertheless, Mr. Ellis proceeded to clear his Property and build a house before a sewage disposal permit had been in approved.

Further, the Panel notes that Mr. Ellis was issued a valid sewage disposal permit after he submitted an application for a system that was designed by an engineer and addressed the Respondent's concerns.

The Panel concludes, for all of the reasons set out above, that the Respondent's decision to refuse to issue a sewage disposal system permit, as sought in the April 26, 2000 application, is reasonable in the circumstances.

The appeal is dismissed.

Alan Andison, Chair
Environmental Appeal Board

January 15, 2001