Environmental Appeal Board

APPEAL NO. 96/22 - HEALTH

In the matter of an appeal under section 5 of the *Health Act*, R.S.B.C. 1979, c. 161.

BETWEEN:	Monica and Paul Matsi	**APPELLANTS**
AND:	Environmental Health Officer	**RESPONDENT**
AND:	Gary Mission	**PERMIT HOLDER**
BEFORE:	A Panel of the Environmental Appeal Board Toby Vigod, Chair Sheila Bull, Member Carol Martin, Member	
DATE OF HEARING:	February 20, 1997	
PLACE OF HEARING:	Richmond, B.C.	
APPEARING:	For the Appellants:	David Kneale
	For the Respondent:	Nick Potter
	For the Permit Holder:	Anthony West

APPEAL

This is an appeal against the November 21, 1996 decision of the Environmental Health Officer (the "EHO") to issue a permit for an on-site sewage disposal system for Lot 2, NW 1/4, Section 31, Township 8, Plan 70706 New Westminster District - 9394 Bothwell Drive, Surrey, B.C. (the "Property").

The Environmental Appeal Board has the authority to hear this appeal under section 11 of the *Environment Management Act* and section 5 of the *Health Act*. The Appeal Board, or a Panel of it, may, after hearing all the evidence, decide to vary, rescind or uphold a decision of the EHO.

The Appellants are seeking an order to rescind the permit.

BACKGROUND

The 1.59 acre property, located in north Surrey, has been the subject of a number of applications for sewage disposal systems. On May 20, 1988, an application for a sewage disposal system with a built up field was submitted by Aplin and Martin Engineering Ltd. on behalf of the previous owners. Mr. Inderjeet Gill, public health

inspector for Boundary Health Unit at the time, who testified at the hearing, wrote to the owners on June 1, 1988, advising them that the septic field could not be approved in this location because it was within 100 feet of a creek. A dialogue ensued between Aplin and Martin Engineering Ltd. and the Health Unit and a number of revised applications were submitted for different locations within the property. The only formal rejection from the Health Unit was issued on November 4, 1988 on the basis that there were unsatisfactory percolation test results; namely, that some test results exceeded the allowable percolation rate of 30 minutes per inch. Further discussions took place about whether the placement of a temporary interceptor ditch would address the concerns of the Health Unit. Eventually, the application was not pursued, and the property was sold.

On July 19, 1996, an application was submitted by West and Associates on behalf of the new owner, Mr. Gary Mission. The application is for an on-site sewage disposal system based on an ASTM C-33 Sand Mound pressure distribution system and an accompanying Klargester BF-1 package sewage treatment plant. The field area is located more than 100 feet from the creek.

On August 1, 1996, Mr. Timothy Millard, EHO, Boundary Health Unit wrote to the applicant stating that the site had approval but that the system still needed to be reviewed. Following a detailed letter from the EHO to West and Associates on August 13, 1996, a revised application and design plan was submitted on August 28,1996. A permit with conditions was issued on November 21, 1996.

On December 17, 1996, the Appellants, owners of the adjacent property, appealed the EHO's decision to the Environmental Appeal Board. The stated grounds of appeal are summarized as follows:

- the permit incorrectly states that there is city water;
- the property has failed percolation tests in the past years;
- there is not 48 inches of dry soil above the water table;
- there is a concern that effluent breakout may occur and contaminate their well;
- the existence of the drainage pipe in the plan indicates there is a concern that there will be effluent breakout;
- the plan does not show a final destination for the drainage pipe. Their driveway has already been flooded.

The Appellants also noted that the permit was not posted until December 7, 1997, over two weeks after the permit had been issued.

Mr. Mission, the permit holder, made an opening statement in which he indicated that he had tried to keep the Appellants apprised of his plans and that while relations were cordial in the beginning, they had deteriorated over time. He

testified that, in his opinion, this appeal was based on harassment and that the Appellants did not want anyone building on the lot next to them.

ISSUES AND LEGISLATION

The primary issue for consideration in this appeal is whether the proposed sewage disposal system as approved for the property complies with the *Health Act* and the Sewage Disposal Regulation and will safeguard public health. The appellants also raised issues as to whether the permit should be revoked for failure to post the notice of the permit within the required time frame and whether the permit should be revoked for inaccuracies in the permit application. These issues will be addressed in turn.

The relevant legislation is the *Health Act* and Sewage Disposal Regulation which set out the requirements for approval and construction of sewage disposal systems. Section 3(3)of the Regulation states that no permit shall be issued until site investigation tests set out in Schedule 1 have been carried out to the satisfaction of the Health Officer and he/she is satisfied that the approved system will not contravene the *Act* or Sewage Disposal Regulation.

Section 2(2) of the same regulation requires that "no domestic sewage will reach the surface of land or discharge into a surface body of fresh water."

Section 7 of the regulation provides that an EHO can exercise his discretionary authority to approve an alternate method for a sewage disposal system where it is impossible to meet certain specified requirements of the appropriate schedule by including, in the permit, such conditions necessary to address the omitted standards provided that he has regard for safeguarding public health.

In this case, Schedule 3, containing rules for Conventional Package Treatment Plant Systems, is the appropriate schedule. Section 7(1)(a) of the regulation provides relief where an owner of a parcel cannot meet any of sections 11, 12 or 18 of that Schedule "but can comply with all other provisions of the appropriate schedule." Section 11 requires that there be at least 48 inches of native soil above bedrock or the water table, and section 12 requires that a conventional absorption field shall not be allowed where the percolation rate exceeds 30 minutes per inch or the slope of the absorption field are is greater than 30%. Section 18 sets out requirements for a conventional absorption field.

SITE VISIT

At the hearing, a video taken on February 19, 1997 was shown by the Health Unit. Following the hearing, the Appellants requested a site visit so that the Panel could better understand the evidence that it had heard. A site visit took place on March 10, 1997. At the site, all of the parties had an opportunity to view together with the Panel the lay of the land, the proposed disposal field site, and other features described in evidence at the hearing and in the video.

EVIDENCE AND ANALYSIS

ISSUE 1: Whether the proposed sewage disposal system as approved complies with the *Health Act* and the Sewage Disposal Regulation and will safeguard public health.

Mrs. Matsi, who has lived on her property for 8 years, testified that she is concerned about the new sewage system on the neighbouring property failing. She also testified that they have had problems with water running onto their driveway, a problem that she alleges they did not have until this fall when the drainage system began to be installed by Mr. Mission.

Mrs. Matsi also testified that coincidentally this fall they are having problems with their well running dry, a problem she and her husband have had in the past. She said they need to put in a new well, and she contends that the location of the proposed sewage disposal system will limit the options for placement of a new well. The Panel finds that the set-back provisions in the Sewage Disposal Regulation refer only to existing wells and not to any potential future well. Further, there may be other limitations to the Appellants putting in a new well behind their house. The Panel, therefore, did not consider the potential location of a new well in the determination of this appeal.

Mr. David Kneale, hydrogeologist, testified on behalf of the Appellants. It was his opinion that the physical conditions of the site will not allow sufficient retention time of effluent in the ground for natural attenuation of pollutants prior to surfacing at points of discharge. He argued that while he did not disagree with the results of the percolation tests that had been done on the property in 1988 and 1996, they “were all over the map” and that they were only indicative of the permeability of the soil at the exact location where they were taken. He testified that in his opinion, the hydraulic conductivity (permeability) of the soils is related to secondary porosity caused by the penetration of roots. He stated that the flow through the root holes would be much quicker than through the matrix of the soil. He said this would result in inadequate retention time of effluent in the ground prior to discharge. Under questioning, Mr. Kneale admitted that he had not done testing of the root holes and that his conclusions were based on theory and practical experience and what he suspects would happen.

Mr. Kneale estimated the permeability of the sand mound, the upper 18 inches of permeable soil, and the lower layer of very tight, impermeable soil. Based on his calculations, he estimated that the soil would be saturated within 5 days. Because of the differences in permeabilities, he estimated most of the effluent would go out of the toe of the mound. Mr. Kneale said that the proposed treatment system does not adequately address the removal of nutrients such as phosphorous and nitrogen and that unacceptably high concentrations of nutrients could be discharged into the tributary of the Serpentine River located on the east side of the site. While agreeing that there would not be a drinking water problem, Mr. Kneale stated that, in his opinion, untreated effluent could cause a potential health hazard to any child playing near the creek.

Mr. Kneale did admit that in coming to his conclusions, he did not have the design drawings, and that he had made, "some assumptions open to interpretation", but that he had taken "his best shot." His bottom line was that he did not believe enough work was done at the site to ensure that it would work as designed. Under questioning, he said that the further work he would undertake would be to determine the horizontal and vertical permeabilities and their effect on flow, and map all possible springs on the site.

Mr. Potter, spokesperson for the respondent, submitted that the concerns raised by the earlier applications such as distance from the creek, ground water control and percolation rates had all been sufficiently addressed. He noted that one of the problems in the past had been the ability to fit an alternative system on the property and maintain the minimum setbacks to the creek and property line. The proposed system has a smaller foot print and fits into the area much easier than the old fill mound system proposed by the previous owner.

Mr. Millard, the EHO, testified that a number of percolation tests had been done over the years. The more recent results showed average rates of 14 minutes/inch and all passed the 30 minutes/inch maximum allowable rate. However, due to results from previous years, the Health Unit stipulated that the system be designed for a rate of 30 minutes/inch which would give the system an added safety margin. Mr. Kneale admitted that designing to that conservative value was "great." Mr. Millard did comment that one of the test holes in October 1988 that had exceeded the maximum allowable percolation rate of 30 minutes per inch was done in a test hole that was 26-27 inches deep. For this application, only the top 18 inches was required to have a percolation rate of less than 30 minutes.

The Panel finds there was no dispute as to the percolation values obtained on the proposed location of the field and that these are under the maximum allowable rate of 30 minutes/inch set out in Schedule 3, section 12, of the Sewage Disposal Regulation. Because of the previous applications, there are more percolation tests than would normally be done at a site. The Panel finds that the site passes the percolation standard and further that the site has been conservatively designed at a 30 minutes/inch rate.

In the case under appeal, the depth of soil on the proposed site is 18 inches which fails to fulfill the 48 inch requirement (Schedule 3, section 11 of the Sewage Disposal Regulation). As noted earlier, this application therefore can only be considered under section 7(1) of the Regulation for an "alternate" method of disposal, rather than a conventional one. The Regulation does allow for a relaxation of the 48 inch requirement if public health can be safeguarded.

Mr. Millard testified that the basal area of the field was greater than the 30 minute/inch design required it to be. He further noted that there was 18 inches of native soil and that the depth of the sand mound was increased from 24 to 30 inches, thus having a total of 48 inches between the impervious layer and the top of the sand mound. He also testified that the package treatment plant, while adding a safety factor and additional protection, was not required with these soil conditions. A 1994 study done by Dayton and Knight Ltd. for the Ministry of Health showed that

the sand mound system has been shown to produce a high quality of effluent on its own without pre-treatment. Mr. Millard testified that there will be 18 inches of ASTM C-33 sand below the bed plus 18 inches of natural soil for a total of 36 inches of unsaturated soil. He stated that studies have shown that 12 inches is all that is required of unsaturated soil and here the sand layer is 1 1/2 times the amount shown to remove pathogens.

Mr. Kneale submitted that the Health Unit's Sand Mound Guidelines were not properly applied in this case. He said that the bed design based on a 30 minute/inch percolation rate and a 9-12% slope should be no more than 5 feet wide and 90 feet long rather than the 10 foot wide and 45 foot long design proposed. Mr. Kneale stated that the permit-holder would not be able to have a 90 foot long bed and still be 100 feet from the creek as required.

Mr. Anthony West and Mr. Donald Jensen testified on behalf of the permit holder. Mr. West, a former public health inspector, has approximately 23 years of experience with sewage disposal systems. Mr. Jensen, who is a certified professional engineer, has had approximately 22 years experience in designing sewage systems. He submitted that the proposed system was designed conservatively in that it was based on a 30 minute/inch percolation rate. Mr. West said that there was indication from the video shown that water was not mounding but going into the soil. He also said that the fact that the water drains across the road and is not "trickle flow" is also evidence of the permeability of the soils.

Mr. Jensen testified that they went to a sand mound design because they want an even spread of the effluent. Further, he submitted that the sand mound guidelines were only guidelines and that a 10 foot wide bed was not inappropriate. Mr. West said that there are plans for a topsoil cap over the mound and that this would help ensure good runoff and prevent penetration into the mound. He said the treatment plant was an additional safeguard.

It is instructive, in this regard, to refer to the Health Unit's November 1995 Sand Mound Guidelines. The document states that as a design guideline, it is intended to help the engineer or designer by providing an orderly set of criteria for developing and specifying the various components of a mound sewage treatment and disposal system. Specifically, the document states that "this guideline must not be used as a template. It is the designer's responsibility on behalf of the applicant to ensure that the design submission adequately takes into account the geographical aspects of the site, effluent flows and characteristics, and any other limitations and considerations." The Panel finds that while the proposed dimensions of the sand mound do not meet the exact specifications of the bed as laid out in the Sand Mound Guidelines, the final design is appropriate and does take into account the relevant site specific features. Further, Mr. Millard testified that sand mounds have been used all over the province and that there has been no incidence of break-out that the Health Unit has seen. The Panel does not find that Mr. Kneale established that there would be a break-out at this site. The site has passed the percolation tests, been designed to a conservative standard, has a greater depth of sand mound than originally designed and has the added safety factor of a package treatment plant.

Mr. Kneale in the Statement of Points filed on behalf of the Appellants, raised some concerns about both the upslope and downslope drains. However, after hearing the evidence of Mr. Millard, West and Jensen, and seeing the drawings Mr. Kneale conceded that the proposed drainage system would work and should divert water from the site.

Mr. Millard testified that the interceptor ditch was required for ground water control. The pipe is solid in the areas near the system to prevent any potential breakout or contamination of ground water. The drainage system was designed to go around the septic system to ensure it captured all the ground water traveling towards the disposal area. The drainage system was installed to ensure that there was at least 18 inches of native permeable soil above the seasonal water table. This will allow the effluent to receive further treatment in the sub-soils under the sand mound.

Mr. Millard also noted that at this time the drainage pipe has not yet been connected to storm drainage, although the permit requires this to occur. He stated that there is a berm that runs down the property line between the two properties and that there is one point where the water appears to be able to go back and forth between the two properties. This is next to a concrete retaining wall. He pointed out that Mr. Mission has recently dug a ditch directly across the driveway so that the water runs down a swale on the opposite site of the driveway away from the property line to alleviate the Appellants' concerns. He testified that once completed the drainage is more likely to reduce rather than increase ground water flow from the Mission's property onto the Appellants' property. Mr. West testified that his firm would be responsible for certifying that all the components are installed properly and meet the approved plans.

The Panel is satisfied that the Appellants' concerns in regard to possible water flow onto their property will be addressed by the proposed drainage control system. Mr. Mission has in fact taken the concerns of the Appellants into account by having the drainage flow down the opposite side of the driveway across from the property line.

The EHO does have the discretion to consider alternate systems under section 7(1) as long as he is satisfied that the system will pose a risk to public health and in particular that no sewage be discharged to land or water. At the hearing, the EHO stated that he believed that there would be no risk. Similarly, the Panel is satisfied that the ground and surface water and public health will be protected if this system is installed as currently designed.

Mr. West also noted that section 13 of the Sewage Disposal Regulation required that an inspection and sampling chamber be provided on the effluent line immediately downstream of the plant. He said monitoring would identify any problem with the system and that a service contract with the supplier could be a requirement of the permit to ensure that any problem was identified as soon as possible. The Panel agrees that an additional monitoring requirement in the permit would ensure that any problem would be identified and dealt with as soon as possible.

ISSUE 2: Whether the permit should be revoked due to the failure to post a notice of the permit within three days of its issuance.

The Appellants submit that the notice of the permit was not posted until approximately December 7, 1996, which was over two weeks after the issuance of the permit on November 21, 1996. The Appellants contend that they only had a limited time to retain an expert and file their appeal by December 20, 1996.

Section 3.3(2) of the Regulation provides that the notice must be posted not more than 3 days from the date the permit is issued, and remain posted for 30 days after the date the permit is issued. In this case, there is no dispute that the notice was posted on approximately December 7, well after the required date. The Panel agrees that this was most unfortunate and has contributed to the mistrust that the appellants have in respect to the issuance of this permit. However, it is clear from the evidence that Ms. Matsi had been made aware on August 13, 1996 that an application for a sewage disposal system had been filed with the Health Unit. Mr. Mission further testified that he had kept the Appellants apprised of the activities that were happening on his property in regard to the sewage system.

More importantly, the Appellants did take steps once they saw the notice of the issuance of the permit to retain an expert and they filed their appeal within the allotted time period. They did not seek an extension of time for the posting of the permit from the Health Unit, nor did they request an adjournment of the hearing before the Board. The Panel finds that the Appellants have not been prejudiced by the delay in the posting of the permit. Further, the Panel finds that any failure to post the notice within the specified timeframe has been corrected by this appeal.

ISSUE 3: Whether inaccuracies in the permit application should lead to a revocation of the permit.

Mrs. Matsi testified that the application erroneously referred to the property and neighbouring properties as being serviced by city water rather than being on well water. She argued that the applicant should have been aware of her property being on well water as someone had called her inquiring about where she obtained her water. She referred to section 3.(4)(a) of the Sewage Disposal Regulation which provides that it is a condition of a permit that, “all material facts disclosed in the application for it are true and not designed to mislead.” She submitted that she feels that the application was misleading in this regard. There is no dispute that the permit application refers to city water and not well water as the source of drinking water for the property and adjoining landowners.

The EHO testified that he did not question the application as he assumed that because city water was the source of water 2-3 blocks away, it was the source at the subject property. However, as soon as he was made aware of the inconsistency in the application by Mr. Matsi on December 17, 1996, he contacted West and Associates who provided him with information on the location of the septic fields and wells on the surrounding properties within 24 hours. Since all existing wells were greater than 100 feet from the sewage disposal system, Mr. Millard felt that rescinding the permit was unnecessary.

On the evidence, all existing wells are greater than the 100 feet required from the sewage disposal system. While the Appellants know the location of their well house, they testified that they did not know the exact location of their well, and submitted no evidence that it is located within 100 feet from the proposed location of the sewage disposal system. The Panel finds it most unfortunate that the application was filed with this inaccurate information. The earlier applications filed by the previous owner had all indicated that the property and adjoining properties had well water. However, in correspondence to Mr. Millard on December 17, 1996, West and Associates noted that they had identified the well locations on the neighbouring lots in the course of their site work and had found that all are over 100 feet from the edge of the proposed field. This information was brought to the attention of the Health Unit prior to the issuance of the permit on November 21, 1996.

The Panel finds that the permit should be corrected in this regard.

Further, Mrs. Matsi testified that a restrictive covenant on the property was not initially disclosed by the applicant and it was not until she had brought it to the Health Unit's attention and the Health Unit had contacted the applicant that reference to the restrictive covenant appeared in the application for the permit. The restrictive covenant filed with the Board, addresses the issue of set back of any buildings or structures and vegetation control near the creek on the property. It also provides that the owner ensure that any clearing and/or excavation ensure that any deleterious substances not fall into the creek via ditches, storm sewers or overland flow. This provision is similar to the requirement of section 2(2) of the Sewage Disposal Regulation that no domestic sewage reach the surface of land or discharge into a surface body of fresh water.

On August 28, 1996 West and Associates submitted a revised application form enclosing a legal plan showing the location of the creek and the associated no-disturbance restrictive covenant demonstrating that the field footprint lies both outside the covenant area and the 30 m setback from the creek itself.

Mr. West testified that he was well aware of the location of the restrictive covenant at the time he designed the system as it was on the earlier drawings done by Aplin and Martin Engineering Ltd. of which he had copies. The Panel finds that the restrictive covenant was taken into account by West and Associates in their design and that it was properly referenced in the revised permit application filed prior to the issuance of the permit on November 21, 1996.

DECISION

In making its decision, the Panel of the Environmental Appeal Board has carefully considered all the relevant documented evidence and all comments made during the hearing, whether or not they have been specifically reiterated here.

The Permit issued on November 21, 1996 states in its conditions that it has been approved for a 3-bedroom single family dwelling; that the system must be installed as per the design plans, an attached letter and all policies and regulations as

applicable. The attached letter includes an inspection protocol which must be followed.

The Panel finds that the permit under appeal should stand, but that it be amended in the following manner:

- the permit should be corrected to reflect the fact that the property and surrounding properties are on well water and it should reference the distance from the field to the nearest wells;
- require a contract for regular servicing and monitoring by a reputable company, the results to be provided to the Health Unit to be approved by the EHO;
- require a plan for site drainage from the mound to the storm drainage ditch be attached to the permit;
- ensure that all conditions to the permit and the approved plan be attached to it.

Toby Vigod, Chair
Environmental Appeal Board

April 2, 1997