700 Bay Street,
24th Floor, Box 330,
Toronto, Ontario.
M5G 1Z6

IN THE MATTER OF

The Lakes and Rivers Improvement Act;

AND IN THE MATTER OF

The proposed refusal of the application of R.V. Harrington of 976 Lakeshore Road, Burlington, Ontario for approval of the construction of a dam on a tributary of the Meux Creek known as unnamed Creek on the West Half of Lot 8, Concession VI, of the Township of Normanby, in the County of Grey.

REPORT TO THE MINISTER OF NATURAL RESOURCES

Pursuant to an appointment dated the 27th day of October, 1982 by the Honourable Alan W. Pope, Minister of Natural Resources, under subsection 11 (1) of the Lakes and Rivers Improvement Act, the undersigned has held an inquiry to determine whether the proposed refusal of the approval of the location of a dam on an unnamed creek on the West Half of Lot 8 in Concession VI, of the Township of Normanby, in the County of Grey, which is a tributary of the Meux Creek, is fair, sound and reasonably necessary for the achievement of the purposes of the Act.

The hearing was held in the City Hall in Owen Sound on March 5, 1983. The applicant, R.V. Harrington, appeared in person. C.L. Cottle appeared on behalf of the Ministry of Natural Resources. Shirley Neal appeared as agent for Gordon Belfry, the owner of Lot 7 in Concession VI of the Township of Normanby through which the water-course flows. Arthur Pries, the owner of Lot 7 in Concession V of the Township of Normanby, appeared. Arthur Pries and Gordon Belfry were made parties to the hearing.

Although the carriage of the hearing was offered to the applicant, who elected to appear without counsel, it was agreed that the Ministry would have carriage of the hearing. In this regard it may be noted that the approach, if not the attitude, of the

...2

applicant was that the hearing provided him with an opportunity to be critical of the action taken by ministry officials rather than accept it as an opportunity to provide to you, through the tribunal, a clear definition of his proposal and the benefits to be derived therefrom.

In summarizing the evidence, the first witness for the Ministry was Jacob G. A. Imhof, M.Sc., the Southern Ontario Fisheries Rehabilitation Biologist. The witness graduated in Honours Biology from the University of Waterloo in 1975 and obtained a M.Sc. Degree in Aquatic Ecology from that university in 1978. He has experienced a wide range of responsibilities in the public and private sector related to his field and was clearly established as an expert in biology.

The witness outlined the policy of the provincial Government in respect of cold water streams indicating that stress was made on the maintenance and rehabilitation of fisheries in Ontario and particularly the protection and rehabilitation of the cold water streams. He pointed out that the habitat of cold water streams has four components, namely, water quality, space, food and shelter. He stated that the "bottom line", by which I understand him to mean the basic consideration, is water quality which involves matters of temperature, sediment, pollution and food. There are maximum temperatures for the continued existence of most species with rainbow and brown trout having a maximum temperature of seventy degrees Fahrenheit and brook trout having a lower maximum temperature of sixty-eight degrees Fahrenheit or twenty degrees centigrade. To maintain such low maximum temperatures it is necessary to have a constant flow of spring-fed water. Such flows should be supported with shading to prevent an undue amount of sunshine impinging upon the stream and raising the temperature above maximum levels. Similarly, temperature control is better in narrow streams as wider streams permit too much sunshine to strike the water and raise the temperature. A more ideal habitat is one with narrower and deeper streams.

...3

With reference to sediment it was submitted that all streams have, in a state of nature, a certain amount of sediment. If nature does not wash this sediment from the stream beds the bottoms are clogged creating layers of sediment over the natural bottom of the streams. The riffle areas and gravel beds can be covered, smothering the aquatic bugs and animals that provide food for fish. One of the best methods of controlling sediment is the maintenance of the banks of the streams with adequate vegetation which will keep the sediment locked up and prevent it entering the stream.

With reference to pollution the witness mentioned two categories. Firstly, pollution can arise from over enrichment of the natural supply of phosphorous that is found in streams from leaf mould and other natural processes that create nutrients. Once this supply becomes excessive problems develop. Such excesses are derived from fertilizer, manure, waste water from fish farms or hatcheries, etc. The result of an overabundance of nutrients is the growth of algae which uses up the oxygen necessary for fish life and for the food on which fish depend.

A second category of pollution is derived from industrial activities such as metallic pollution from lead, zinc, etc. or chemical pollution from mirex, dioxin, D.D.T., etc. The results of such pollution vary from immediate kills to long range insidious kills such as cancerous growths.

With reference to space the witness stated that in the study of stream morphology, the physical characteristics of streams are broken into four parts, namely, riffles, which are sloping areas with shallow, fast water, pools which are deep and slow flowing areas, runs which are deep and fast and flats which are broad, shallow slopings. He pointed out that in the developement of streams there is a tendency for the water to bounce from bank to bank and create a meandering effect. This creates the pools or food supply. Trout require all of these four aspects in their life cycle and it is essential that a trout stream provide the four

. . . . 4

categories of habitat. Emphasis was placed on the riffles which provide spawning areas, food supplies and in effect are the nursery areas for younger fish and the bread basket for the fish population.

With reference to food the witness pointed out that food supplies are created in the riffle areas. These areas provide a habitat for the insects and other aquatic animals that provide a food source. This food is trapped in the rocks and gravel in the riffle areas and the waters in the area are oxygenated through the riffling effect.

With reference to shelter the witness pointed out the need of hiding places for trout to evade its predators. Trout prefer areas that are covered on three sides such as under cut banks, boulders, logs and debris. Smaller fish can rely on grass, twigs and branches.

With reference to reproduction of species the witness indicated that in his studies he had established that there are specific requirements of habitat for good reproduction. Rainbow trout are not as specific as brooks. Larger gravel may provide an adequate habitat for spawning grounds for rainbow trout. Brook trout require areas containing smaller gravel of pea size. However, more significant to good reproduction is a constant flow of spring water. If the nests, i.e. redds, become silted the eggs are smothered and fail to hatch. While this may not be too significant on one occassion, constant siltation over a period of time will deplete the population through failure to reproduce.

With reference to species found in Ontario streams, Imhof referred to Atlantic salmon and brook trout which are indigenous species and rainbow and pacific salmon which are introduced species. While the introduced species have some tolerance to changes in habitat, the brook trout have a very narrow tolerance to changes in habitat and are frequently referred to as the "canary in the mine" indicating that the species is most vulnerable to changes. The conditions necessary to maintain a population of brook trout include

. . . . 5

cold water not above sixty-eight degrees Farhrenheit for more than a few days at a time, low silt loads, optimum habitat and food supplies.

The witness referred to the brook trout as being a "the stream resident trout", as distinguished from rainbow trout which may live in a stream for a period of two years but ultimately in the life cycle move toward the lakes and return later for spawning. In contrast brook and brown trout spawn in the streams and live their entire life in the stream. Some studies have shown that brook trout do not migrate beyond one-quarter of a mile in their lifetime.

With reference to the reaction of brook trout to mechanical devices inserted in streams, the witness stated that brook trout are not strong swimmers, particularly as compared to rainbow trout, and while they may feed in fast waters they spend the greater portion of their time in slow flowing areas. The witness indicated that in his experience brook trout will only migrate through devices in which they can swim and unlike rainbow trout are unable to jump over impediments.

With reference to the resource value of the brook trout, the witness indicated that it is an original species found in Ontario and is part of the heritage of our province. From an economic point of view brook trout is the more sought after species. Most anglers fish for brook trout at sometime in their activities and anglers come from across Ontario, the United States and parts of Europe to participate in brook trout angling.

With reference to loss of habitat of brook trout, the witness stated that as a result of watershed mapping conducted two years ago, it has been established that only thirty per cent remains of the streams in Ontario that once sustained brook trout populations and in southwestern Ontario only ten per cent of such streams are presently providing habitat for brook trout. This loss is due to agricultural and milling operations. The loss of the Atlantic salmon was attributed to the construction of dams. Where

. . . . 6

dams have been abandoned there is evidence that species are being re-established.

With reference to the effect of construction of dams, diversions of streams or instream ponds on brook trout populations, the witness stated that there are several effects. Firstly, there is an alteration in the natural flow of the stream. If the stream is straightened there is an increase in the gradient of the bottom of the stream. The natural meandering of a stream provides greater distances than exist where the stream is straightened. With an increased gradient more materials are washed into the stream causing the banks to slump and changing the morphology of the stream by the addition of silt and other garbage. It also changes the natural sequence of riffles and pools reducing the number of hiding and feeding areas. These changes result in overcrowding of the remaining areas leading to health and other detriments on the population attributable to a loss of shelter, space, food and water quality.

These changes frequently affect the temperature of the water and the silted conditions of the bottom of the stream. The increase in temperature results from the loss of bank vegetation and the increased temperature and the silt affect not only the area in question but downstream areas and it takes several years for the newly constructed bed to stabilize. In the interval there is not only the loss in connection with the diversion but also the downstream effect from the increased temperature and silt.

The effect of instream ponds is that temperature is increased by enlarging the size of the surface exposed to the sun. Temperatures are increased from the fact that the water is held and does not move on to shaded areas. The Fish become less tolerant as a result of the exposure to higher temperature. In addition the beds of the ponds constitute silt catchers which may have a temporary beneficial effect in preventing downstream siltation but they have to be cleaned out at intervals. The pond creates a nutrient sink which fosters algae production with its detrimental result on the downstream waters. The creation of ponds remove,

. . . . 7

spawning areas and stops migration of populations to spawning areas. The result is that the portions of the stream that are made inaccessible will fail to maintain a population of brook trout which it otherwise would be capable of sustaining.

With reference to temperature, the witness indicated that where ponds are sufficiently deep, perhaps in excess of ten feet, the water tends to stratify and the upper levels of water will increase in temperature as much as five to six degrees centigrade. If the warm water is spilled from the top of the headpond the downstream water will be increased in temperature. Where bottom draws are provided the temperature problem may be evaded but there are still problems related to silt and food supplies.

The witness indicated that the headwater springs and streams are the most important part of a watershed. The tributaries are similar to capillaries in an animal body and provide the life forming necessities related to water quality. It is essential to maintain the clear, cool waters to support the downstream portions of the watershed. Where one tributary is lost or harmful effects are created in the tributary the downstream quality is affected and there is a cumulative effect where more than one headwater areas are affected.

When questioned in respect of the length of time it would take a cold water stream to recover from the effects of a diversion, the witness stated, assuming there was no interference with the temperature of the water, approximately five to ten years would be required to rehabilitate the diversion, assuming the diversion was accompanied by suitable rehabilitation steps such as stabilization of the banks and provision of cover. If the work were not done properly there would be a minimum of fifteen years before nature could re-establish the diverted portion of the stream.

In the witness's opinion the preservation of cold water streams fell within the purview of the Lakes and Rivers Improvement Act.

...8

On cross-examination Neal inquired as to the ratio between loss of streams and renewal of streams and the witness indicated that the ideal situation would be for there to be an equal return for those destroyed but his estimate was that at present there is only one area being rehabilitated for every ten areas that are destroyed.

On cross-examination by the applicant the witness discussed the distinction between ponds and pools, pointing out that pools are relative in size to the stream and agreed in the term of the questioner that it is not desirable to have a 'ubiquitous trough". He was questioned as to whether streams can be too cold for the proper development of fish and the witness indicated that temperatures of one degree centigrade sustain fish populations in areas that he has fished and that in the United States and England there are streams with temperatures in the range of fifty degrees Fahrenheit that produce trout of substantial weight.

The applicant pointed out that he had not seen any gravel beds of the size mentioned by the witness. The witness indicated that brook trout have some flexibility with regard to type of bottom and he has observed spawning on areas with larger gravel and even sand. He stated that the most critical issue is the temperature and the spring water source. Thirdly, cover is essential and trout will adapt to areas with boulders or other rubble.

The witness was further questioned with regard to the ability of brook trout to swim up through culverts with elevations and the witness's position was that if the slope were too great the trout could not be expected to traverse the entire sloping area.

When asked by the applicant whether the period of rehabilitation could be reduced by a conscientious person the witness submitted that perhaps with very careful practices the period of time could be reduced but at the minimum it would take three to four years for a population to readjust.

With reference to cover the applicant inquired as to the effect of twenty-four agricultural tiles measuring two feet in

...9

diameter. Apparently, at one time these tiles formed part of an agricultural drain but in a cleaning operation the township had decided that it would no longer use the tiles and has left them on the property of the applicant. It was submitted to the witness that these tiles would, for a distance of one hundred feet, provide both shade and protection. The witness indicated that total shading was as equally harmful as lack of shading. A certain amount of sunshine is necessary to assist the growth of natural bodies in the water which are essential to the fish population. While the tiles might provide shelter the food content of the water in the tiles was questioned and the ability of fish to migrate through the tiles would depend on the speed of the flow of water through the tiles.

The witness indicated that brook trout can swim through a flow of one foot per second for very short distances but if the distance becomes longer the trout are not able to swim upstream against such a flow. The witness related an experience in connection with rainbow trout of establishing that where there are pitches of one per cent over distances in excess of sixty-seven feet, the rainbow trout have difficulty in swimming through the stretch of water. It is only where there are current breaks, i.e. spaces of dead water in which the current is stopped, that fish can navigate through a long stretch of rising water. In the witness's opinion it might well be that the tiles would not assist in the future propagation of the brook trout population.

With reference to maximum temperature the witness reiterated that, while brook trout can sustain life for a few days of temperatures approximating twenty degrees centigrade, they are in such circumstances exposed to parasites and diseases and are likely to not survive. In temperatures higher than twenty degrees centigrade the species dies.

The applicant submitted to the witness that the source of his water was drainage from an agricultural area. He admitted that there were springs along the watercourse but that the main headwaters of the stream through his property was a roadside ditch collecting the outflow from agricultural drains. With

. . .. 10

the silt problem the witness suggested that the best approach was to remove the source of the silt by the creation of buffer strips, fencing against cattle and stimulation of vegetation growth which would retain the silt.

On re-examination the witness confirmed that where there is evidence of spawning of brook trout it is a safe assumption that the absolute requirements for spawning are present, namely, water of adequate temperature and quality. He further outlined the factors causing reduction in temperature as the loss of spring water, the reduction of canopy or cover, the widening and making shallower of streams and the artificial heating of water through such devices as headponds.

Kenneth Woods, the Water Resources Technician and the officer of the Ministry of Natural Resources whose duty it is to administer the Lakes and Rivers Improvement Act in the Owen Sound District, produced as Exhibit 3 the application, as Exhibit 4 an aerial photograph of the area, as Exhibit 5 a report he made following an inspection in July, 1982, as Exhibit 7 a report of the District Biologist and as Exhibits 6 and 8 correspondence with the applicant respecting the intention to refuse approval of the location of the proposed dam.

The witness indicated, with reference to Exhibit 4, that the proposal was to reconstruct a dam that existed on the subject lands many years ago, creating a headpond and diverting the existing stream downstream from the dam to the westerly aide of the property of the applicant. In addition the applicant proposes to construct three dug ponds to the north of the dam. The witness indicated that it was not considered that these dug ponds, by themselves, fell within the jurisdiction of the Act.

Following the witness's inspection which confirmed, as he had confirmed in the previous December, that the part of the stream in question contained brook trout and that it was a spawning area for brook trout he recommended against any diversion, instream dam or bypass pond. Following the investigation of the District

...11

Biologist, it was recommended that the approval not be forthcoming.

Steven James Kerr, the District Biologist, who graduated in 1977 with a Bachelor of Science Degree in Biology and who has been employed in a seasonal capacity with the Ministry from 1971 and in a permanent capacity since 1978, gave evidence. Following receipt of the application, this witness caused two members of the stream survey crew to survey the creek in question. This survey was performed on July 28, 1982 and the data obtained by the crew is attached to Exhibit 7. Further the written report of the crew was filed as Exhibit 11. A portion of the data, entitled Aquatic Habitat Inventory, dealt with the physical characteristics of the stream. This showed that fifty per cent of the banks of the stream were stable and fifty per cent were unstable.

With reference to temperatures, it showed an air temperature of nineteen degrees centigrade and a water temperature of twelve degrees centigrade. With reference to stream cover it showed that ninety per cent had dense cover and ten per cent was partly open with no part of the stream being entirely open. The report classifies the substrata of the stream as having fifteen per cent rubble, twenty per cent gravel, ten per cent sand, fifteen per cent silt, twenty-five per cent clay, ten per cent muck and five per cent marl.

In addition with, reference to the degree of silt it was reported as being moderate, namely, in the range of twenty-five to fifty per cent covered. Algae was reported as being sparce. The report showed eight springs feeding the stream through seepage and five flowing streams with an average temperature of twelve degrees centigrade. It also showed two tile outfalls. There was no indication of any natural or artificial barriers. The aquatic vegetation was classed as emergent and submergent (watercress).

With reference to instream cover the report shows that there was thirty per cent of the stream with undercut banks, ten per cent with logs and trees and twenty per cent with organic debris. In classifying the habitat the report showed that seventy per cent of the habitat qualified as nursery habitat and thirty per cent

. . . . 12

qualified as spawning habitat. The witness pointed out that this last item was most exceptional and that it is rare that one hundred per cent of a stream tested is useful as habitat. Eighty per cent is an exceptional figure. The report showed that eighty per cent of the stream was bounded by firm pasture, twenty per cent by swamp with equal percentage of hardwood and conifers. The data also contains the count of fish taken through sampling with the electric shock method. A representative fish sample was taken and forwarded to Toronto for identification and the report shows that three species have been taken namely, brook trout, central mud minnow and brook stickleback.

The witness gave evidence that in his opinion the stream provided excellent brook trout rearing and spawning habitat. The temperatures of twelve degrees centigrade indicated an excellent spring supply of water. There was a large percentage of undercut banks and instream protection, particularly, for junior populations. There was shading from bank vegetation, protection and food supply and in the witness's opinion the stream provided high quality nursery habit for brook trout.

The witness attended the site himself confirming the report of his crew. He mentioned that the stream ranged from one and one-half to three feet in width in its upper areas and from four to five feet at the junction of the Meux Creek which is downstream from the applicant's land and on the land of Belfry. He confirmed that the stream contained stable undercut banks and had a number of instream structures and an abundance of overhead vegetation. He noted a number of springs seeping and flowing into the watercourse which provided cold spring water. In his opinion the area was a spring recharge area important not only for itself but also as a source of cold water for Meux Creek. Any watershed system is only as good as the water flowing into it and it is important not only for the stream itself but for Meux Creek that the cold spring waters not be interfered with. The existence of watercress indicated a low temperature of the water and a good source of nutrients.

...13

He noted faint evidence of an old dam and a stream leading in a northerly direction from that dam. When asked the effect of a channel that might be created in lieu of the existing channel the witness indicated that such a channel would probably have a width of five to six feet, be shallower than the present creek and not have any of the desirable characteristics such as undercut banks and overhead protection. In his opinion a man-made channel would not be a suitable replacement for the existing creek.

From the point of view of the resource value of the creek the witness indicated that in the Owen Sound District they are faced with a disappearing resource and a decreasing number of spawning and nursery areas. A number of such areas have been lost over the years and in the witness's opinion it was very important to retain the existing stream in its natural condition.

With reference to the effect of the proposal the witness did not see any significant problem in connection with the digging of ponds. However, the reconstruction of the old dam and the loss of habitat from the diversion would provide a restraint on the movement of fish upstream. Even with a bottom draw system there would be negative eftects on the fishery. The Meux Creek contains a resident brook trout population. The creek warms up in sunny weather in the summer. The fish seek out areas at the mouths of feeder streams and the populations move into the feeder streams where the water is cooler. The creek in question would also provide a nursery for the Meux Creek population which could go up from Meux Creek into the spawning areas in the existing creek. The young would remain in these locations for a period of two years and then would probably migrate down again into Meux Creek.

The witness indicated that the importance of these tributaries is that there is a finite supply of cold water sources. Their importance lies in their effect on the quality of larger downstream areas and the water that they feed into such areas. There is a cumulative effect on the watershed downstream. Cold water sources and headwater areas have to be protected to maintain the fisheries in the opinion of the witness.

...14

The witness estimated that the stream had been in its present location for at least twenty to thirty years. Exhibit 12 is a number of photographs taken by the witness during his inspection of the property confirming the quality of the habitat of the stream.

On cross-examination by Pries, the witness indicated that they had no historic records of the populations of the stream in question. It was suggested that if the applicant had not applied the Ministry would not have known of the existence of the stream. The witness pointed out that the local conservation officer had indicated his familiarity with the existence of the stream and its containing a population of brook trout when the matter first came to his attention. Pries raised the question of whether the amendment of the proposal to permit the outlet from the dam to be in the same location as the present stream would assist the problem. The witness's answer was that while it would not destroy the habitat which is proposed to be lost, there are still problems of degradation of thermal quality, blocking of migration and siltation.

Neal raised questions regarding the alternative of having cleaned out the tiles rather than build a ditch. The witness indicated that he could not offer any evidence as to how such an alternative could have been carried out but did offer the view that the action that had been taken has caused a serious siltation problem downstream from his observations made while attending the site.

In cross-examination the applicant raised questions regarding the instructions of the crew which did not appear to be of assistance. He put the question to the witness that if the purpose of the Act was to ensure the use, management and perpetuation of the fish and wildlife resources would it not be better to permit his proposal rather than have the lands returned to agricultural use. The witness pointed out that the Game and Fish Act provides for management agreements between a landowner and the Crown under which management of the stream can be carried out and be financed publicly with the result that steps can be taken to preserve the stream in a

...15

natural condition. The witness also indicated that he had seen some evidence of the old channel along the west boundary of the applicant's lands but that it was difficult to find.

On re-examination the witness said that in reviewing applications under the Lakes and Rivers Improvement Act he looks at the potential impacts on the fish and wildlife resource as a direct or indirect result. He examines the work proposed and its location. He then takes into account the concerns, often in consultation with other officials, including the Fish and Wildlife Supervisor.

Arthur Pries' evidence was that as a result of the drainage work the tiles on his property which are upstream of the subject lands are now running freely. He indicated that in the past he had obtained fish by fishing through cracks in the tiles. There was some discussion between Pries and Neal as to the effect of agricultural drains on their respective properties but this appears not to be relevant to the present inquiry other than it indicates that there is a siltation problem resulting from the outflow from the agricultural drains.

The applicant asked Pries how he maintained the flow of water during his ownership of the subject lands. He indicated that it had been necessary to use a rake to keep the water flowing. At one time, approximately twenty years ago, the ditch was blasted out but it subsequently filled in. He indicated that there had been problems with silt over the years. Further during his ownership the creek did not flow on the Belfry property but followed the line fence flowing directly into Meux Creek. It subsequently was diverted through filling and made its way across the Belfry lands.

Counsel for the Ministry brought out that the ownership and leasehold interest by the witness go back as far as 1936 and during that period there was no dam on the property and the creek was in its present location.

The evidence on behalf of Gordon Belfry was given by

...16

Shirley Neal who indicated that Belfry purchased Lot 7 in Concession VI containing one hundred acres in 1977. He proposes to retire in 1985 but in the meantime the witness resides on the property. The lot is suitable for part time farming and contains a wooded area with a creek flowing through the wooded area. The witness expressed concern that if the water warmed up it would affect the trout and detrimentally affect the recreational value of the property. This witness again made reference to the issue of the action taken by the township.

On cross-examination by the applicant it was brought out that there is a flow of spring water from the Belfry property onto the applicant's property but it does not flow through any recognizable channel.

On cross-examination by counsel for the Ministry, the witness claimed that the creek in question originated on Belfry's land, flowed onto the applicant's land and came back to Belfry's land. She also gave evidence that Belfry derives pleasure from the creek and the trout populations on his property and he has a concern for the effects of the proposed dam in respect of the continued use of his property. The witness stated that one of the selling points of the Belfry property is the existence of live trout in the stream on the property.

In his evidence in chief the applicant stated that he and his wife had for some time been looking for a rural property that would enable them to make a living off the land. One of their wishes and wants is the creation of a happy living through the raising of fish. After touring Ontario and Canada for a potential site he acquired the subject lands in September, 1981. He was pleased with the site because it had running water, springs and a remnant of an old dam indicating previous development. Upon

...17

acceptance of his offer he attended three one-day courses at the University of Help in respect of related matters such as fish farming and pond construction. While at Help he obtained his initial set of application forms which were subsequently submitted to the Ministry. He made an application but it was put over for consideration until the spring of 1982. However, in 1981 the township undertook steps to open and clean out an agricultural drain and an area at the south side of his property on which bulrushes were growing and which was said by the township road superintendent, Smith, to contain three feet of material that should not have been there, was bulldozed out and a large "ugly ditch" was opened up across the front of his property.

The witness produced as Exhibit 13 a large aerial photograph which he understood to be 1975 photography. He pointed out that the photograph shows that the stream, at the southerly end of his property, meanders through the bulrushes but these were removed by the township operations.

In the spring of 1982 he examined the property further and was able to establish on the ground the overflow of the old dam by virtue of the growth of marsh marigolds. In his view there was considerable silting but the land still was in a wet condition permitting the growth of such plans.

The applicant admitted that he did not wish to operate to anyone's detriment and did not wish to deprive his neighbour to the west of his creek which he does enjoy. He thought his proposal was fair to all concerned including the Ministry. He stated that he was flattered that he had a nursery creek that spawned brook trout which would feed Meux Creek.

The applicant indicated that he had invested funds in the purchase of the property, without identifying the amount, and had funds available in the bank awaiting the construction of the ponds. He indicated that he had considered smaller ponds at the side of the existing creek but in his opinion these would not justify the cost of their construction. In the event he is not able to divert the

...18

creek it will be necessary for him to invest in another type of operation and fifty acres is a small acreage on which to support oneself. He indicated he could see no option but to replace the lands back into pasture which he did not wish to do because of the detriment to the creek.

On cross-examination by Neal, the applicant stated that he intended to make his complete living in raising fish and that the commercial operation would be carried on in the three large ponds that would be northerly of the proposed dam. He indicated that he proposed to construct a building to house pigs on the marshy part of the property. The manure from the pigs would be used for growing worms as the witness did not believe in the feeding of fish with cereal.

He indicated that two of the ponds would be stocked with rainbow trout and one with bass. He further enlarged upon his proposed dealing with the area downstream from the dam by suggesting that he proposed to construct the three ponds in such a way that the water from the two upper ones would cascade downwards into the third pond and in so doing there would be a considerable amount of fill produced which would enable the raising of the areas around the upper ponds and also provide a berm approximately forty feet from the lot line between the two properties and would permit a forty foot strip to return to a state of nature. He indicated that there was evidence of old streams flowing through this area and he thought that the berm would prevent this. The proposal was that the diverted stream would flow through the forty foot strip and the berm would create a barrier preventing the water flowing from the Belfry lands proceeding further onto the applicant's lands. The diversion and such waters would flow through the new channel to a junction with the existing creek near the location where it enters the Belfry lands.

With reference to the heating of the water in the creek, the applicant stated that he felt he could prevent the heating of the creek water by controlling the upper levels of the headpond and

...19