BEFORE THE WARDEN IN OPEN COURT
HELD AT PERTH.

WARDEN: **G.N. CALDER SM**

HEARD: 10, 11, 12 MARCH 1999
7, 8 APRIL 1999

DELIVERED: 8 JULY 1999

IN THE MATTER OF:

APPLICATIONS 70/729 AND 70/740 FOR THE GRANT OF MINING LEASES

OBJECTIONS 88H/912 AND 162H/912 TO THE GRANT OF APPLICATIONS 70/729 AND 70/740

BETWEEN:

JOHN LESLIE BAXTER, BRUCE SCOTT MALONEY, GRAEME BRUCE PRIOR, JOHN ANDREW SIMPSON & STEPHEN LESLIE THOMAS

Applicants

and

SERPENTINE-JARRAHDALE RATEPAYER'S AND RESIDENT'S ASSOCIATION (INC.)

Objector

WARDEN'S REPORT AND RECOMMENDATION TO THE MINISTER (SECTION 75 MINING ACT)

Appearances:

The applicants appeared in person.
Mr M.B. Bennett instructed by the Environmental Defender's Office of WA (Inc) for the objector.

THE PROCEEDINGS

These applications for the grant of two mining leases have a long history which I will refer to later in these reasons. Application 70/729 was lodged with the mining registrar at Perth on 18 November 1991. It seeks the grant of a mining lease over an area of 8 square kilometres. Application 70/740 was lodged with the mining registrar at Perth on 10 February 1992 seeking the grant of a mining lease over an area of 9.1 square kilometres.

Objection 88H/912 was lodged on 16 December 1991 objecting to the grant of Application 70/729 and objection 162H/912 was lodged on 25th February 1992 objecting to the grant of Application 70/740. Each of the objections contained several grounds which can, in broad terms, be adequately described as raising environmental issues. There is no need to refer to them in any detail at this point as they were subsequently amended on two occasions. The second occasion upon which the grounds of objection in respect of both applications were amended was at the commencement of the hearing before me on 10 March 1999.

THE HISTORY OF THE APPLICATIONS AND OBJECTIONS

Previous Proceedings

At all material times the applicants have been and still are the holders of Exploration Licences 70/785 and 70/838. The ground applied for in Mining Lease Applications 70/729 and 70/740 is in part within the ground the subject of those two exploration licences. In respect of application for Mining Lease 70/729 there is a strip of ground which runs the full length of the western side of the ground applied for in 70/729 which was not covered by any existing exploration licence held by the applicants. That strip of land is bordered on the western side by River Road and on the eastern side by part of the western boundary of Exploration Licence 70/785 as it existed at the date of the marking of application for Mining Lease 70/729. Approximately forty percent (I estimate) of the ground applied for in Mining Lease 70/740 is not contained within the ground covered by Exploration Licence 70/838 which was held by the applicants at the time of the lodgement of Mining Lease 70/740. As a consequence of the above matters the provisions of S.75(7) of the Mining Act apply to only part of the land applied for by the applicants.

On 3 December 1992 Warden French heard argument and published her reasons in respect of what she described in those reasons as "... a preliminary point as to the competency of objections based on environmental considerations by persons who are not the owners or occupiers of parcels of land included within the applications for mining tenements." In the final paragraph of her reasons Warden French said: "... I find that I do not have the power to consider objections based on environmental considerations and hereby dismiss all objections other than those made by private landowners who are owners and/or occupiers of parcels of land included within the applications for Mining Leases 70/729 and 740 and the objection made by the Sport Aircraft Builders' Club (73H/912)."

As is made clear from those comments of the Warden the Serpentine-Jarrahdale Ratepayer's and Residents Association ("the Association") was not the only objector at that time.

The decision of Warden French was considered by the Full Court of the Supreme Court of Western Australia in re Warden French: ex parte Serpentine-Jarrahdale Ratepayer's and Residents Association (1994) 11 WAR 315. The decision of the court was delivered in January 1994. In his reasons for decision Ipp J said that the power of the Warden to hear the objectors' objections to the grant of the mining leases required the Warden to be satisfied as to two things, firstly, whether or not the objector had the necessary standing to object and, secondly, whether the objections concerned matters of public interest. He concluded that the Warden had not considered whether the objector had standing to object nor whether the environmental issues raised by the objection were matters of public interest. (Page 329). Kennedy J agreed with the reasons published by Ipp J.

In April 1996 the applications and objections were once again placed before a Warden. The Warden, Mr P. Heaney SM, heard evidence from three objectors (which included the Association) and heard submissions on behalf of the objectors in order that he determine whether or not the objectors, as the Warden put it in his published reasons (page 1), "... did have the requisite standing and secondly whether the objections they sought to be raised do go to the public interest." On 24 May 1996 the Warden published the reasons for which he had come to the conclusion that none of the three objectors, which included the Association, "had the requisite standing and further that the objections ... did not go to the public interest."

The decision of Warden Heaney was the subject of a certiorari application to the Full Court: re Warden Heaney; ex parte Serpentine-Jarrahdale Ratepayer's and Residents Association (Inc) (1997 18 WAR 320). The Full Court by way of a judgment delivered by Franklyn J with whom Murray and Owen JJ agreed without further comment, ruled that the Warden was obliged to determine whether the grounds of objection related to "... a matter or matters of such a nature as to be reasonably capable of giving rise to the question whether it is in the public interest that the ground should not be disturbed or that the application for the mining lease be refused." Franklyn J also said that: "should (the Warden) find it to be of that nature it is still a matter for his discretion whether the objector should be heard". His Honour said that it was not correct to say that an applicant "... could only be accorded standing to object if he could establish a special interest in the subject matter of the proceedings."

In the matter of re Warden Heaney it was only the Association which had sought the writ of certiorari. None of the other objectors had taken that step. Accordingly, the applications for Mining Leases 70/729 and 70/740 together with the objections of the Association were remitted by the Supreme Court to the Warden to be dealt with in accordance with the provisions of section 75 of the Mining Act ("the Act").

On 21 December 1998 the Full Court, consisting of Kennedy, Pidgeon, White, Steytler and Wheeler JJ in the unrelated matter of in re Warden Calder; ex parte Cable Sands (WA) Pty Ltd (unreported; library number 980734), in a majority ruling, Pidgeon J dissenting, refused to overrule the decisions of the Full Court in re French and re Heaney. In a judgment delivered by Steytler J, with which Kennedy, White and Wheeler JJ agreed without further comment, the Full Court said that the Warden in hearing an application for the grant of a mining lease was empowered in appropriate circumstances to hear evidence and submissions in support of objections to the grant of the lease where the grounds of the objections related to matters of public interest (which could include matters related to the

consequences to the environment of mining activities being carried out on the ground applied for) which were matters of public interest of a type in respect of which the Minister was required to give consideration pursuant to the exercise of the Minister's duties under section 111A of the Act.

Warden's Order as to the Nature and Timing of Proposed Mining Operations

On 11 September 1998 Warden Heath SM, after hearing submissions from the parties, made an order as follows:

> "1. So far as the Applicant is able, the Applicant provide to the Warden and the Objector, by 25 September 1998, a written statement setting out the nature and timing of proposed mining operations, including details as to:
> (a) the method of mining to be adopted;
> (b) the nature of the minerals to be extracted;
> (c) the estimated period of the mining process;
> (d) the nature of processing on site, if any;
> (e) the surface area and depth of the mining pit;
> (f) the area of ground to be disturbed at any given time;
> (g) the quantity and source of water to be used in the mining process and in the dust control process;
> (h) proposed measures to prevent the mining operations causing fluctuations in the surface water level in the surrounding area, and increasing the salinity of surface water;
> (i) transportation of minerals from the site;
> (j) the stockpiling of soil;
> (k) proposed dust control measures;
> (l) hours of operation;
> (m) areas of flora conservation (if any) within the proposed mining area;
> (n) the benefits to residents and the wider community (if any) from the mining operations;
> (o) proposed mine site rehabilitation."

The Warden also ordered that discovery and inspection be given by each party.

The Applicant's Response to the Order of the Warden

In accordance with the order of Warden Heath made on 11 September the applicants, subject to the reservations and qualifications expressed in submissions made in writing to the Warden, furnished what were described as "answers ... of a general nature presented to the applicants' best ability ..." The applicants said that there was no current feasibility study which indicated that a mine would ultimately proceed, that the information provided was provided "in good faith but with the expectation that some, or all, of the opinions expressed will prove to be incorrect when, or if, a notice of intent to mine is prepared and submitted for approval at some time in the future." It was also said that the applicants considered that "... the only way open to the applicants at the time of application in order to maintain security of tenure over the project was an application for Mining Leases."

In broad terms the information provided by the applicants in compliance with the order of Warden Heath indicated that if any mining took place it would be a dredge mining operation carried out to extract heavy mineral sands over a period of 2 to 6 years. It was said that the surface area of the mining pit could be within 1 to 5 hectares and the depth of mining could be from 5 to 25 metres below the surface. It was said that at any given time between 10 to 35 hectares of land could be disturbed and that rehabilitation would take place behind the dredge. It was expected that the source of water used in the mining operation would be ground water and that it was anticipated that the use of the water would not create any problems. It was acknowledged that control was necessary and important. The submissions stated that it was expected that there would be an alteration to the salinity of the water system in the area, nor that there would be any significant discharge of water onto the surface of the tenement. Mention was made of the expectation that topsoil would be stockpiled then improved before being relocated back to mined-out areas as part of a rehabilitation management plan. It was said that it was to be expected that the dredge would operate 24 hours a day, but that the equipment would not be unduly noisy. In respect of flora conservation it was stated that only one area of flora conservation, namely reserve 25911, was likely to be affected by the grant of the lease but that it was unclear whether that reserve would be included in any mining plan. Commentary was made as to the economic benefits of sand mining. In conclusion it was said that:

> "(o) a clear proposal of rehabilitation will be necessary in the feasibility study and environmental management plan. Irrespective of mining method, should mining proceed, the land will be returned to a state agreed by the land owners and consistent with the planning schemes being developed around the Armarillo development."

Attached to the submissions was a document headed, "List of reports available to objectors".

THE PARTICULARS OF THE OBJECTION

As previously mentioned, at the commencement of the hearing before me on 10 March 1999, counsel for the objector tendered, without opposition from the applicants, the objector's final amended grounds of objection together with particulars thereof which I now set out hereunder.

"GROUNDS OF OBJECTION

1. The Objector objects to the grant of a mining lease on the grounds that it is not in the public interest that the land the subject of the application be disturbed or that the application in question be granted.

PARTICULARS OF OBJECTION

(a) Mining particularly dredge mining will have an adverse effect on the ground water levels and quality within the immediate vicinity of the mining operations.

(b) High water usage will cause increased salinity in groundwater.

(c) Mining will have an adverse effect on the run off into the Peel Harvey Inlet.

(d) Noise caused by the proposed mining operations will have an adverse effect upon the surrounding population.

(e) Dust generated by the mining operations will be carried by the wind at speed to neighbouring residents particularly on the western side of the proposed mining tenement.

(f) Large numbers of heavy trucks using local roads transporting material to and from the mine site will cause a danger and inconvenience to neighbouring residents.

(g) Existing roads are unsuitable for heavy traffic associated with mining operations.

(h) Mining employees will be exposed to radiation and high levels of dust causing and increased likelihood of illness.

(i) Local residents would be exposed to radiation and high levels of dust causing an increased likelihood of illness.

(j) Areas of natural flora containing native fauna will be destroyed to the detriment of the general population.

(k) Portion of the land applied for is within areas identified by the Government of Western Australia through *Perth's Bushplan* as having regional significance for conservation purposes.

(l) The applicant will be unable to adequately rehabilitate the area of any mining once mining has been completed.

(m) The grant of any mining lease will have a detrimental effect on the lifestyles and livelihoods of local land holders within and outside the proposed area of the mining lease by making the area less attractive and conductive to good health and less attractive to tourists and visitors.

(n) Mining operations will lower property values in the general vicinity.

(o) The costs in terms of environmental change interference in lifestyle of local residents outweighs the likely benefits of mining to the State of Western Australia.

2. The fact that the applicants propose exploration of the proposed tenement area rather than mining makes the application for mining lease premature and accordingly inappropriate.

AND THE OBJECTOR ASKS that Applications for Mining leases 70/729 and 70/740 be recommended for refusal.

DATED this 9th day of March 1999"

It was not made clear to me by the parties and I have been unable to discern from the registry documents which have been placed before me whether or not any application was made to the Warden to amend the particulars of the two objections in accordance with the particulars which I am told were lodged in December 1995. What then became and still remains as ground 2 of the grounds of objection put before me on 9 March 1999, raised an entirely new ground which had not been raised in the original objections. In the absence of any comment by the applicants in this matter I have proceeded upon the basis that when Warden Heaney heard the application and objections and gave his reasons for decision thereon in 1996 the objection as it now appears before me was, in substance, the objection which the Warden dealt with and, from that, I infer that the Warden had permitted the addition of ground 2.

The grounds for the objections which were placed before me at the commencement of this hearing were, I am satisfied, the same as those which were before Warden Heaney save that there have been some minor typographical corrections and that paragraph (k) of the particulars has been amended by deleting the words "in the Yeale Nature Reserve" and replaced by reference to areas identified in Perth's Bushplan "as having regional significance for conservation purposes".

His Honour Franklyn J in his reasons for decision in the matter of re Heaney referred to the passage setting out the dicta of Jacobs J in Sinclair v Maryborough Mining Warden (1975) 132 CLR 473 at 487 which had been quoted by Warden Heaney in the Warden's report made to the Minister. In his reasons Jacobs J had said:

> "The words *public interest* are so wide that they comprehend the whole field of objection other than objection founded on deficiencies in the application and in the required marking out of the land applied for. For instance, the public interest may tell against the granting of a mining lease even though particular interests of an individual are the only interests primarily affected. It may thus be in the public interest that the interests of that individual not be overborne. However, all the objections can be and should be related to public interest. But private interests as such are not a relevant consideration."

His Honour Franklyn J said in re Heaney (@ 325) that the passage of Jacobs:

> " ... in its entirety, appears appropriate to the concept of 'public interest' in the context of the Act. It is important to recognise, however, that in that context the public interest is that identified in section 111A. Consequently, in my view, to be relevant as going to 'public interest', an objection, whether lodged primarily in respect of a 'private interest' or as one of 'public interest' must contain a discernible objection concerning the public interest of such a nature as to be capable of exciting the consideration of the Minister under section 111A. That is to say, it must be discernible from the objection that it raises a question which, objectively viewed, can reasonably give rise to a concern that the disturbance of the relevant land or grant of the application might not be in the public interest.

> The determination whether or not such disturbance or grant is or is not in the public interest is a matter for the Minister to be taken into account in the exercise of his discretion under s111A."

Ground 1

In my opinion all of the matters mentioned in ground 1, paragraphs (a) to (m) and (o), raise matters which "objectively viewed, can reasonably give rise to a concern that the disturbance of the relevant land or grant of the application might not be in the public interest" (per Franklyn J in re Heaney). I consider, in that sense, that those paragraphs of the first ground of objection do "contain a discernible objection concerning the public interest of such a nature as to be capable of exciting the consideration of the Minister under section 111A" (per Franklyn J in re Heaney). Although the issue is not argued before me I consider that it would have been highly unlikely, had there been any opposition to the objectors being heard in respect of those matters, that I would have exercised my discretion so as not to hear the objectors.

Paragraph (n) of ground 1 of the grounds of objection does not appear to me to come within the category of "public interest" for purposes of section 111A. Paragraph (n) says: "Mining operations will lower property values in the general vicinity". There are two aspects of that particularised ground of objection upon which I should comment. Firstly, it could perhaps be said that paragraph (n) is no more than a statement by the objector of what the objector says is a natural and inevitable consequence of the effects of all of the matters set out in all of the other paragraphs of ground 1 and that that, of itself, is something which, in the public interest, the Minister should not allow to happen and that he should prevent it from happening by acting pursuant to section 111A and refusing to grant the tenement. Alternatively, paragraph (n) could be seen to be raising a "private interest" of the type referred to by Jacobs J in the passage from Sinclair v Maryborough Mining Warden, which I have referred to previously, and which was discussed by Franklyn J in re Heaney at (P324-5). In that decision Franklyn J said (@ 325):

> "Whilst, on their own, private interests are not a relevant consideration, they may well be such if there is a public interest in their protection. It does not necessarily follow (although it might in a particular case) that, because of the provisions of those sections of the Act, there can be no aspect of public interest in an objection lodged by a private landowner or occupier who is entitled to the protection provided by those sections. That indeed was recognised by Jacobs J in Sinclair (supra) in the above quoted passage which, in my view, in its entirety, appears appropriate to the concept of 'public interest' in the context of the Act."

In the passage from the decision of Franklyn J which I have just quoted his Honour made reference to "the provisions of those sections of the Act". He was then commenting upon that part of Warden Heaney's report to the Minister wherein the Warden had made reference to sections 27, 28 and 29 of the Act (which relate to private land) and to sections 35 and 123 of the Act (which relate to payment of compensation to, inter alia, owners and occupiers of private land) and his Honour was also making reference to the view expressed by the Warden, which view his Honour disagreed with, that such private interests could not be relevant to a Warden's decision as to whether or not a tenement application should be recommended for grant.

Part VII of the Act is headed "COMPENSATION". It contains sections 123, 124 and 125 which relate expressly to compensation; it also contains section 126 which is headed "SECURITIES". Section 123 provides that owners and occupiers of any land where mining (which includes marking out) takes place are entitled to recover from any person mining on that land compensation for any actual or likely loss or damage sustained resulting from the mining. The amount of compensation payable may be agreed or may be determined by the Warden in the absence of agreement. Subsection (4) provides that owners and occupiers of private land may be compensated for loss of access to and use of the land, loss of or damage to improvements, damage to the natural surface of the land, social disruption, reasonable expenses incurred in controlling or reducing damage arising from or resulting from mining, and, in the case of land under cultivation, compensation for loss of earnings and generally related to loss or impairment of the capacity to utilise the land for cultivation.

Section 123(5) of the Act appears to be of particular relevance in the present case. It says:

> "If any private land or improvement thereon adjoining or in the vicinity of land where mining takes place is injured or depreciated in value by the mining or by reason of the occupation of any portion of the surface or enjoyment by the holder of a mining tenement or of any right of way, the owner and occupier of the private land or improvements thereon are entitled severally to compensation for all loss or damage thereby sustained and the amount of compensation shall be determined in the manner provided in the section."

Section 123(9) says that a determination made by a Warden's Court upon an application for payment of compensation is a final determination.

Section 124 of the Act requires a Warden, when considering matters relating to compensation, to take into account any work that the person who was liable to pay compensation has carried out or undertaken to carry out to make good injury to the surface of the land or anything thereon. The Warden must also take into account any amount of compensation already paid. Subsection (2) also empowers a Warden to require restoration so far as that is reasonably practicable, however, in doing so the Warden must take into account a number of specified matters including the cost of restoration relative to the total cost of the mining operation and the profitability of the operation, the location of the land and its pre-mining use.

On its face, and now with the benefit of hindsight after having heard all of the evidence presented by the objector, it appears to me that, in this case, paragraph (n) raises a matter of private interests and I consider that the intention of and policy of the Act require that those interests should be dealt with under the compensation provisions to which I have just referred and that, in this case, those interests are not interests of a type in respect of which, as a basis for the exercise of the discretion of the Minister under Section 111A, it could be said, as was said by Jacobs J in Sinclair's case, that it is "in the public interest that the interests of (those) individual(s) be not overborne". I do not consider that in this case the potential or even the actual lowering of values of property in the general vicinity of the ground applied for arising as a consequence of the grant of the tenement or as a consequence of the commencement of sand mining, is a matter which the Minister would be required to act upon in performing the exercise of his discretion pursuant to

section 111A or in performing his duties under any other part of the Act or regulations in connection with the final decision of the Minister upon the applications for grant of the leases. In coming to that conclusion I have taken into account the size of the area covered by the two applications, their locality, their relative proximity to the metropolitan area, to nearby townsites, to residences, to small businesses located in the vicinity.

Ground 2

Ground 2 of the objection says:

> "The fact that the Applicants propose exploration of the proposed tenement area rather than mining makes the application for mining lease premature and accordingly inappropriate."

In my opinion ground 2 does not "contain a discernible objection concerning the public interest of such a nature as to be capable of exciting the consideration of the Minister under section 111A." (per Franklyn J in re Heaney) The objector did not expressly submit that ground 2 did raise any issue of the public interest as contemplated by section 111A. The position adopted by the objector in respect of ground 2 of the objection was set out in separate written submissions filed by the objector in that respect to which I will later make reference.

THE THRESHOLD QUESTIONS

In his reasons for decision in the matter of re Heaney Franklyn J (@ 327), in discussing the right of persons to object to the grant of a mining lease under the provisions of the Act, said:

> "The Act authorises a person who wishes to object to the grant of an application for a mining lease to lodge an objection and impose no limitation other than that it must be lodged within the prescribed time in the prescribed manner and, by necessary implication, must be relevant to the grant of the application in the context of the *Mining Act*."

His Honour later said (@ 328):

> "The object of the objection is to alert the Minister to a matter which the objector sees and which the Minister might see as a matter of public interest."

His Honour went on to note (@ 328) that it had been held in **re Warden French** that "... by reason of the words 'subject to this Act' in s75(7), the Minister nevertheless, by virtue of the provisions of section 111A(1), has a discretion to refuse the application if, in respect of the whole or any part of the land to which the application relates, he is satisfied on reasonable grounds in the public interest that (1) the land should not be disturbed or (2) the application should not be granted. In re **Warden French** is also authority for the proposition that objections to the grant of a mining lease may extend to matters of public interest."

In the same decision Franklyn J said (@ 332):

> "In my view, in the case of an application under s67 in respect of an existing exploration licence in which there is no question that the claimant has not 'complied in all respects with the provisions of this Act' (s75(3)), the provisions of s75(7) come into play and, 'subject to this Act', the Minister 'shall' grant the holder of the exploration licence a mining lease or leases. Relevantly, s111A authorises the Minister to refuse the application but only if satisfied on reasonable grounds in the public interest that the land should not be disturbed or the application should not be granted. In my view that requires that an objection as (sic:on) public interest grounds provides adequate particulars of the respects in which it can be objectively said it is in the public interest that the claimant's application be refused or the subject ground be not disturbed.
>
> That is necessary not only to properly and adequately identify the objection but so that the claimant knows what is the objection he has to meet in the event of the objector being given the opportunity to be heard. It is, of course, always a matter for the Warden, but mere assertions and claims based on speculation might well work against the exercise of discretion.
>
> "Consequently, the proper exercise of discretion would appear to require that the Warden examine the grounds of objection and determine whether, objectively, they relate to a matter or matters of such a nature as to be reasonably capable of giving rise to the question whether it is in the public interest that the ground should not be disturbed or that the application for the mining lease should be refused. Should you find it to be of that nature it is still a matter for his discretion whether the objector should be heard. Bearing in mind the provisions of the Act and in particular s111A and that, pursuant to s75(5) the Warden is to forward to the Minister the notes of evidence relating to the application together with his support and recommendation, it would seem generally appropriate, in such case, that he hear the objector. The Minister will then have the benefit of the "filtering of objections based upon consideration of the public interest through the Warden" "see Warden French (at 317), per Kennedy J".

His honour Franklyn J thus expressed the threshold questions which must be asked and answered by the Warden in order to decide whether objections have been properly based upon the provisions of S.111A.

In the present case no submissions were made to me at or before the commencement of the hearing by either the applicants or the objectors as to whether or not all of the amended grounds of objection were based upon or raised matters of public interest of the nature or significance as should properly be the subject of the attention of the Minister for the purposes of section 111A of the Act. Nor were any submissions made as to the issue of whether or not the Warden should exercise the discretion given by section 75(5) of the Act so as to allow the objector to be heard. In any event, I proceeded to hear the applications and all objections with the implied consent of all parties.

THE EVIDENCE

Evidence Called by the Objectors

The objectors called Mr Price who described himself as an oral historian. Mr Price gave evidence, which I accept, that since May 1997 he has been a councillor for the Shire of Serpentine-Jarrahdale ("the Shire") and that he has lived within the boundaries of the Shire for approximately 10.5 years. On the basis of the evidence of Mr Price I find that the Shire has a continuing policy of opposition to mineral sand mining within the boundaries of the Shire, that that policy arose as a consequence of the holding of public meetings at which it was assessed that such a policy was one which the majority of those who lived within the Shire were in favour of. I also find that in order to carry that policy of opposition into effect the planning committee of the Shire resolved in 1990 that their town planner be authorised to object to the granting of any exploration licences or mining leases in respect of proposed sand mining operations.

The objectors next called Mr Delmarco whom I find is currently, and has been since 1996, employed by the Shire as an environmental officer. Mr Delmarco has a Bachelor of Science obtained in 1989 majoring in environmental science. Prior to his employment with the Shire he was engaged for 5.5 years with the West Australian Water Authority and the West Australian Waters and Rivers Commission. In the course of that 5.5 years he was involved in the mapping, classification and evaluation of wetlands.

Mr Delmarco outlined what he considered to be some of the main environmental issues associated with sand mining on the ground the subject of the two applications before me. He said that those main issues were disturbance of the soil, clearing of vegetation, removal of fauna habitat, removal of the ecosystem, modification to groundwater levels and the effect thereof upon vegetation and therefore fauna which is dependent upon affected vegetation. He said that the area in question was "somewhat more vegetated than other parts of the Swan Coastal Plain within the Shire". He mentioned that that had been recognised through studies such as Perth's Bushplan (to which I will later make reference). Mr Delmarco also noted that there are some horticultural and agricultural activities in the vicinity of and upon the ground applied for, including vineyards, olives, marron farming, poultry farming, however, he also noted that there were some uncleared areas and some areas which had not been grazed as far as he was aware. Mr Delmarco described Perth's Bushplan as being: "... a strategy to protect areas of greatest significance within the Bushplan area ...". He also said: "... the thrust of the study has been to identify areas which are considered by ... the State Government, to be of regional significance, and the criteria are based on percentage of vegetation of a certain vegetation type that is left, therefore, there is some measure of rarity, ..." Mr Delmarco said that the ground applied for was also within the general region of the Peel-Harvey Estuary. He said that the Shire occurs within the surface water catchment for the Estuary and that water which came from the shire flowed into waterways which made their way into the Lower Serpentine River where there are a number of lakes and from there into the Peel-Harvey Estuary. The significance of that, he said, was that if the proposed mining operations caused alterations to groundwater levels there was the potential consequence of increased mobility and availability of nutrients in the soil which would ultimately enter the river and estuary system and contribute to algael blooms which are constituted by toxic plants in the water making the water unfit for human and animal consumption and, in some cases, contact.

Mr Delmarco also said that the ground applied for was within what he understood was a potential future drinking water source for the extended Perth metropolitan area, however, he was unable to comment on what effect the proposed sand mining operations may have on that future water source.

In cross-examination Mr Delmarco conceded that there had been clearing of vegetation within the ground applied for and that there was no pristine remnant native vegetation left anywhere in the Shire, including the ground applied for. He said that Yangedi Swamp, which is on the eastern boundary of M70/740, was one of the wetlands on or adjacent to the ground applied for which was considered to be of significance.

Mr Semenuik, an environmental scientist and natural history researcher gave evidence on behalf of the objectors. Mr Semenuik has obtained the degrees of BSc(Hon) and PhD in earth sciences (1968 and 1971) and in 1973 was awarded a Queens post-doctoral fellowship in marine science, which he described as being an international award in marine science, dealing with coastal wetlands and coastal systems. He has worked continuously in environmental scientific research since he began his first degree.

In summary, I find that he is an extremely experienced environmental scientist who has done extensive research and study on coastal wetlands, dune ecology, and coastal groundwater systems which sustain coastal wetlands. Mr Semenuik said that the land contained within M70/729 immediately north of Henderson Road (which is along the southern boundary of M70/729 and the northern boundary of M70/740) is in his opinion of high conservation significance. He said that Yangedi Swamp as a whole was of conservation significance, however, that portion of the swamp which crossed into the eastern edge of M70/740 was not necessarily of high conservation significance. He said that, in general terms, the wetlands on or adjacent to the ground applied for, it could be argued, are not significant in conservation terms on an international scale but that they still had a local conservation significance. He said that in his opinion the Henderson Road wetland was highly significant.

Mr Semenuik was of the opinion that any mining on the Henderson Road wetlands would destroy them and that it would not be possible to adequately rehabilitate those wetlands after mining. He explained that he believed the wetlands to be approximately 7000 to 10,000 years old and said that soils had developed within each of the wetlands which were specific to the particular setting and that that particularity was perceived by vegetation occurring on each wetland area in a particular way. He said that there were thereby distinct associations of plants related to soil types which characteristics it had taken 7000 years to develop. It was his opinion that no-one had a full understanding of the processes which led to the wetlands developing to their present states and that, therefore, mining would irrevocably destroy them. Mr Semenuik, in his evidence in-chief, commented upon hydrological reports which had been prepared by Rockwater entitled "Pitstone Black Sands of Western Australia Wetlands Project" for a previous joint venture partner of the applicants. He said, in effect, that the contents of that report, whilst adequate in a macroscopic sense, being on a large scale, did not have the agenda to produce a true understanding of the effects of mining on the wetlands. He said that further testing would need to be done. In particular he said that there should be more small-scale studies done across some of the significant wetland areas to establish the stratigraphic framework within which water level monitoring bores could be established. Further, that such bores should be monitored for a number of years. He also said that other bores should be drilled

at different depths to determine pressure levels of the groundwater to see whether water was recharging from or discharging from wetlands during different times of the year and whether or not such discharges or recharges were continuous. He also said that draw-down tests should be considered specifically around wetlands in an endeavour to assess the movement of water through the area being tested. A draw-down test he said would involve pumping at a level to simulate water extraction under mining conditions.

During cross-examination Mr Semenuik said that a waterbird report and a report on vegetation which had been prepared on behalf of the applicants was, in his opinion, not of sufficient quality to be used in assessment of the potential effects on birds and vegetation of sand mining operations.

Ms Keighery was a further witness called by the objectors. She has a Bachelor of Science majoring in botany and zoology with first-class honours in botany. She is employed as a senior environmental officer by the Department of Environmental Protection ("DEP"). She said she has written approximately 40 publications and 20 reports in her field. She said that her particular expertise was the flora and vegetation of the Swan Coastal Plain.

In addition she said that since 1994 she had been involved in the System 6 update which is incorporated in Perth's Bushplan and that she was responsible for the technical documentation and for putting that document together and supervising it and writing much of it. I am satisfied that Ms Keighery is a very experienced environmental scientist and that she has the expertise which she claimed in the flora and vegetation of the Swan Coastal Plain. She explained that in 1994 DEP and the Environmental Protection Authority ("EPA") decided that the System 6 report which had been released in 1983 needed revision and that, in particular, there was a need to recognise the regional conservation significance of some areas. That involved surveying a number of areas on the southern Swan Coastal Plain which included mapping and studying wetland areas. She said that at the same time the Ministry for Planning had started a project called the Perth Environmental Project which was focused upon the natural bush areas within the metropolitan area and that from that the urban bushland strategy developed. One of the end products of the System 6 update and of the Perth Environmental Project was what is now known as Perth's Bushplan. She said that the Bushplan was publicly available and that the proposals therein had been released for public comment.

Ms Keighery said that site 378 on Bushplan map 100 which is an area to the north of Henderson Road, previously identified by Mr Delmarco, met the criteria of representation of an ecological community, that it was representative of the vegetation complex represented by banksia woodlands at times dominated by jarrah and by a series of wetlands dominated by melaleuca prisiana. She said that the area also met the criterion of rarity because it was occupied by southern brown bandicoot. In addition it had scientific or evolutionary importance coming to some extent from floristic studies and, further, it fell within the general criterion for protection.

Ms Keighery also identified Bushplan site 77, shown in Bushplan maps 100 and 101, as being of significance. Bushplan site 77 comes in part into the ground applied for in M70/740 in the vicinity of Yangedi Swamp. The witness said that site 77 contains a lake which was within the environmental protection policy for lakes on the Swan Coastal Plain. She said that the site retained significant vegetation.

Mr Dunlop, a consulting ecologist and part-time university lecturer in ecology-related courses at Notre Dame University was called by the objectors. His qualifications are a Bachelors degree in Environmental Science, with Honours in biology, and a PhD in biology; both degrees having been obtained at Murdoch University. I find that at present 70 to 80 per cent of his work is in the area of biological survey. I find that between 1990 and 1994 he was employed by the Department of Minerals and Energy as an environmental and rehabilitation officer. That work involved the assessment of proposals made in respect of exploration licences and mining leases in order to decide what, if any, environmental conditions should be imposed on such licences and leases and also to check whether there had been compliance with rehabilitation and other environmental conditions which had been imposed. That work included field inspections. He said that since approximately 1978 he had worked continually as an ecologist.

Mr Dunlop was shown a report entitled, "Hopelands Mineral Sands Project Vertebrate Fauna Report by Hart Simpson and Associates" dated 1991. He had read that document. He said that the nature of the studies described in the document was inadequate to determine the totality of the vertebrate fauna in the area studied.

He expressed the opinion that it was not possible to rehabilitate ground which would be affected by a sand mining operation at a rate which would compensate for the loss of habitat and that the effect of that would be a reduced supply of animals which could go into rehabilitated areas in the long-term. He conceded that he had only looked into the ground applied for from adjoining boundary roads but said that he had been able to see into the ground applied for over distances ranging from 5 to 40 metres. When comparing those distances to the dimensions of the ground applied for it can be seen that Mr Dunlop had only a limited capacity to evaluate the area the subject of the applications. During cross-examination he said that he did not consider it to be correct that most of the terrestrial fauna in the area was sufficiently mobile to avoid the consequences of mining activity.

The evidence of Mrs Moss, a resident of lot 1086 River Road, which is on the opposite side of River Road to the ground applied M70/729 for was also called as a witness. I accept her evidence that she had lived at that address with her family since 1988, that she considered her land to be her "dream block" and that she had moved there to take advantage of the quiet rural setting. On her property are a number of dams. Two dams contain approximately 18,000 black bream fish. That is a commercial enterprise. She earns income from cattle breeding and from the breeding of horses on the property. 70 per cent of the household income is earned off the land which consists of just under 40 hectares. Water for all activities on the property is obtained from bores and dams and water levels are critical for the maintenance of horses, cattle and fish. She said that there are strong easterly winds which blow across the property. She is concerned about noise and dust which may flow from the mining operations which are proposed and which would be located to the east of her property, and she gave evidence of what she described as quite dramatic seasonal fluctuations in water table levels.

Mr Kailis gave evidence, which I accept as true, in respect of several relevant issues. He is the managing director of Baldivis Estates Pty Ltd which has three large blocks of land within the ground applied for, namely, lots 165, 398 and 399. Lot 398 fronts onto River Road. Lot 399 fronts onto Henderson Road. Lot 165 on one side joins lot 399 and on the other side joins lot 398. Together the three lots form an L-shape. Lot 399 (which is within

and covers a large portion of Bushplan site 378) is not at present used by Baldivis Estate. On lot 398 and 165 there is considerable commercial activity conducted by Baldivis Estate. There is a restaurant which attracts between 100 and 150 people each weekend. There is commercial production of wine grapes, table grapes and of wine. There is an orchard containing avocados, limes, olives; all in commercial quantities. Wine sales, including door sales, of $150,000 amount to approximately $1,000,000 per annum. Income from limes, avocados and olives, annually, is in excess of $100,000 and it is anticipated will increase. At any one time up to 20 persons are employed on the properties.

Mr Kailis said that there are two main dams on lot 398, that the largest dam is entirely serviced by groundwater and that each day approximately 1.2 million litres of water are pumped onto the crops. Water is pumped into that main dam to supplement it from a seep located on the property and also from two bores located nearby. The topping-up procedure is carried on almost 24 hours every day. I find that one of the reasons why the company commenced its operations on the land it now occupies was the quality and the quantity of water available and that the commercial operations are completely dependent upon the quality and the quantity of their water sources being maintained.

During the summer the main dam level can drop to as little as half a metre deep which is a significant contrast to its maximum depth of 5 metres achieved during winter. The water level in the main dam is reduced to between half and 1 metre for approximately 5 to 6 months of the year.

Mr Kailis said that he did not anticipate that if water levels rose by up to a metre that would cause any problems in the cultivation of their crops.

Evidence was given by Mr Kailis that the company hoped to expand the restaurant trade and in order to do so would be reliant, in part, upon the aesthetics of the area. He said that the future plans of the company included development of lot 399 for what he described as "eco-tourism". He said he envisaged that the land would be developed by some horticultural undertakings associated with guest chalets.

Mr Kailis said that the presence of a mine on the ground applied for would, it was anticipated, detract from the natural beauty and attraction of the area upon which the planned future eco-tourism project would heavily rely.

Mr Kailis gave evidence to the effect that for a number of years the company had been able to operate using the amount of water that he described and obtaining the water from the same sources and in the same manner as he described. He said that the two bores which supplemented the main dam each drew approximately 100,000 litres per day during those months when the water table level was low, that is to say from about November until the first heavy rains. He said that the second dam from which water was drawn to supplement the main dam provided 20,000 litres per day.

Doctor Scott, a lecturer in environmental science at Murdoch University and the holder of the degrees of BSc and PhD in chemical engineering also gave evidence for the objectors. I find that the witness has been engaged in research and teaching of groundwater hydrology for approximately 15 years. I find that he had read a report prepared in July 1996 by Trevor Bestow and Associates Pty Ltd for Capel Sands (WA) Pty Ltd entitled

"A Review of the Hydrogeology and Mine Development Hydrology at Hopelands". Dr Scott was referred during his evidence in-chief to page 27 of that report where there was a prediction of the effects on groundwater levels of dredge mining wherein it was predicted that there would be a draw-down of about 1.5 metres at a distance of 200 metres from the pond centre and at 400 metres from the centre a draw-down of .47 metres. He was also referred to a draw-down prediction contained in the report in respect of a dry mining operation wherein the prediction was that there would be approximately 6 metres' draw-down at a distance of 200 metres from the pond and about 2.3 metres draw-down at 400 metres from the pond. He was referred to other calculations in the report and asked to express an opinion about them.

Dr Scott's opinion was that the predictions were unlikely to be accurate because of the use in the making of the calculations of a theoretical value for the storage coefficient which was very high. He said the report depicted the ideal case and that there were other variables which would need to be taken into account to make predictions more likely to be accurate. Other variables which he mentioned were the interconnection factor between different parts of the aquifer, the presence of air in the aquifer and other things which could have an impact upon water flow into and water obtainability from the aquifer.

The predictions, he said, were based upon the ideal case where all water in the aquifer was available for pumping. Dr Scott said if there was in fact a lower storage coefficient there would be a greater draw-down effect. He drew attention in particular to the fact that there was no data which had been obtained from pumping tests as distinct from theoretical calculations. It was his opinion that pumping tests in specific areas should be done before any sort of mining operations were commenced. He said that by that he meant that there should be pumping for at least 2 weeks at a level of pumping that could be expected during mining operations and that such tests should be done at the upper and lower parts of the proposed tenements because the potential for the effects upon those two areas being entirely different. He thought pumping should be at the rate of something in the order of 2500 cubic metres per day and that while such pumping tests were being undertaken water levels in nearby bores, swamps and rivers should be monitored. He suggested the possibility that in the northern section of the ground applied for water would have to be pumped away from the mining site because some monitoring of bores already done had indicated that there was an upward flow of groundwater in that sector and, further, that in the southern portion of the ground applied for it may be necessary to supply water to the area during mining because previous monitoring had indicated that there may have been a downward flow of water in that area.

Dr Scott gave evidence, which I accept, that water in the northern sector of the ground applied for would be drawn from what is known as the Leederville aquifer which is a potential drinking water source for the metropolitan area.

At the end of his examination in-chief the witness expressed a general view that on the basis of the reports which he had read relevant to the ground applied for he considered that it was not really possible to appropriately manage the mining operations. He did not give any evidence of having any expertise in sand mining or any form of mining.

During cross-examination he agreed that 2000 cubic metres a day being drawn for 5 months during any year would be a reasonable test of the aquifer provided it was accompanied by monitoring of nearby bores, but qualified that concession by saying he would not say that the drawing of such a quantity of water from a dam which had been dug below the water table was an appropriate method of testing the capacity of the aquifer.

The final witness called by the objectors was Mr Dell, a biologist, who had been employed for 25 years at the West Australian Museum specialising in terrestrial vertebrates, their ecology, distribution, general biology and natural history. His specialisation was focused mainly upon reptiles, amphibians and birds and he had published many papers in his field, approximately 30 of which had been published in refereed scientific journals.

He said that he had done a brief assessment of Bushplan site 378 located to the north of Henderson Road. He said that the vegetation on that site was some of the best long-unburned vegetation of its type on the Swan Coastal Plain, estimating that it had not been burned for several decades judging from the quality of the vegetation. He said that there was quite a variable vertebrate fauna habitat, that there was a very tall vegetation understorey which he had not seen elsewhere on the Swan Coastal Plain in over 40 sites which he had inspected and that the vegetation provided a habitat and a food source for a variety of species. He said that where there has been a long period of time since fire last occurred in any area one can expect to find a high diversity of mammals.

He described Bushplan site 378 as being one of the more important sites on the Swan Coastal Plain. He commented during cross-examination that some of the species observed on that location occurred extremely rarely on the coastal plain.

Evidence Called by the Applicants

The first witness called on behalf of the applicants was one of the applicants, namely, John Leslie Baxter. Mr Baxter is a geologist who obtained the degrees of Bachelor of Science with Honours and a Master of Science, both from University of WA. He has taught hydrology at Curtin University for the past 2 years and undertaken research in aquifer yield improvement and also in regional stratigraphic implications of hydrogeological issues. In 1977 he wrote a bulletin on the geology of heavy mineral sands in Western Australia which was published. He worked for the Geological Survey of Western Australia for 15 years, 3 years of which consisted of hydrogeological work. He has also published papers on stratigraphy of parts of the Swan Coastal Plain being stratigraphy of superficial deposits above major aquifers.

In his evidence Mr Baxter said that the studies which he had been involved in concerning the Swan Coastal Plain related to upper layers of material which he described as superficials. He said that such superficials sit on what is known as the Guildford clay unit which is essentially made up of mud flats and which acts as an aquiclude which is a boundary through which water cannot pass either up or down unless there is a hole in it. He said that the lower aquifers were sands below the Guildford clay the first of such layers of sand aquifer being what is known as the Leederville formation. Mr Baxter said that the Leederville formation holds water which flows from the Darling Scarp. Most of his research, he said, was in respect of materials which were situated above the Guildford clay.

I find that during the time that the exploration licence held by the applicants was the subject of joint venture agreements exploration activities were carried out on the ground now the subject of the mining lease applications. I find that Mr Baxter was responsible for organising and supervising the exploration activities and was also responsible for having preliminary environmental studies undertaken by various specialist persons and organisations. He was also responsible for the appointment of Mr Masters, who gave evidence for the applicants, to coordinate the environmental studies. Those exploration activities and studies to which I have just made reference were undertaken on Exploration Licences 70/785 and 70/738. It was Mr Baxter's evidence, which was not contradicted, and which I accept as true, that a major east-west drilling programme was undertaken by the joint venturers. That programme was done on 50-metre sections running from Jarrah Road in the north to past Henderson Road in the south. Mr Baxter said that exploration had still not yet been completed on the ground applied for. He expressed the opinion, however, that over the full length of the ground now applied for there is an inferred resource. He said that between $1.5 to $2,000,000 had been spent on exploration conducted on the two exploration licences. Mr Baxter said that although there was what he described as a "central core" within the ground applied for which had a measured resource, that did not mean that the mineralisation was economic and that it was now necessary to undertake further investigation and study in order to try and assess whether there was a "reserve" as distinct from a "resource". He said that at such a stage in the investigation of the ground in question it would be normal to undertake further hydrological studies and that there had as yet been no detailed study by hydrologists of the areas so far drilled.

Mr Baxter said in evidence that an extremely large volume of water is constantly moving through the Leederville formation aquifer. He said that the evidence given by Mr Kailis as to the amount of water which Baldivis Estates was using and its source indicated that the water system was relatively stable and that the amount of water being drawn by Baldivis Estates did not seem to be "challenging the hydraulics at all". Mr Baxter said that in addition to the water contained in the Leederville formation which was below the Guildford clay layer there was water contained in what he called Bassendean sands. Mr Baxter said that in addition there was a third source of water which occurs on top of a coffee rock layer which, in broad terms, is located above the Guildford clay but within the Guildford sands. He said that the coffee rock layer prevented water from sinking any further into the Bassendean sands. It was not, however, a continuous or unbroken layer throughout the Bassendean sands and did not occur in all parts of the Bassendean sands layer. Mr Baxter said that the water in the Bassendean sands aquifer is generally fresh, generally of high quality and derives mainly from rain and creek run-off. He said that it was in water contained within the Bassendean sands that a sand mining dredge would be floating.

Mr Baxter said that water which was contained by the coffee rock formation within the Bassendean sands was exceptionally fresh and was totally dependent upon rainwater.

Mr Baxter said that between 45 and 50,000 cubic metres of water a day flowed into the Serpentine River system from those water sources. He expressed the view that, within the regional context, drawing 1 to 2.5 thousand cubic metres a day for mining would not create any real problem. He conceded, however, that it would be necessary to do full-scale testing to establish what would happen if mining were commenced as contemplated.

He also conceded that he expected that there would be an increase in groundwater salinity during mining operations but that it would only be transitory. In relation to draw-down effects of mining operations on the groundwater Mr Baxter said he agreed with the Bestow report in which it was stated that there would be approximately 1.2 metre draw-down at 200 metres from the pond where dredging was being carried out and that at 400 metres the draw-down would be .5 metres.

In relation to the effect of local winds and the potential dust problem Mr Baxter said that in his experience (which included many visits to the area in question) local winds were not as strong as had been suggested by Mrs Moss in her evidence and that in any event the particles involved in the heavy sand mining operations were sand-sized particles, not clay-sized, and that it would require considerable wind velocity to make the sand actually fly. He also made the point that if there was a dredging operation a lot of the material extracted would be wet. He agreed that there would be a need to manage dust coming from roads and that dust from the topsoil stockpile would also have to be managed; he said the latter could be managed by the use of sprinklers.

As to potential radioactivity within the extracted material Mr Baxter expressed the opinion that the deposit was exceptionally low in monazite which is the principal radioactive material in heavy mineral sands deposits.

Mr Baxter conceded that he had no expertise in the classification of the conservation significance of bushlands or wetlands and had no qualifications concerning rehabilitation of the environment after mining operations had ceased. He said that the environmental studies which had been undertaken so far had been intended to enable the applicants to collect a primary environmental data base. He said that before any mining could occur it would be necessary to identify how much of the mineralisation occurring on the ground applied for could be upgraded to reserve status and that in order to do that further exploration would have to be conducted in the form of drilling. He said that at the moment it was considered that the resource which had been identified was not sufficient to support a stand-alone mine and that it was therefore unlikely that there would be any major plant established on the site. That would of course mean that material extracted would be trucked away from the site for further processing. Mr Baxter also said that before any mining could take place a feasibility study would also have to be done. The study would be in the fields of metallurgy, geology, the environment, mining engineering and anything else that required investigation in order to find out whether or not the mineralisation could be mined economically.

Mr Baxter gave a brief explanation of the mining and extraction process which he anticipated would be utilised if mining proceeded. He said that the pond within which the dredge would be operating could be 50 to 60 metres in length by about 10 metres in width, perhaps more. Mr Baxter disagreed with Dr Scott in that Mr Baxter did not consider it would be necessary to do large-scale draw-down testing because the activities of Mr Kailis on the Baldivis Estate land had demonstrated that amounts of water similar to those which would be required for mining could be consistently taken from the aquifer without any damage to the water table.

He agreed during cross-examination, however, that all of the wetlands in the vicinity of the area would need to be monitored to see what effect the pumping of the quantities of water required was having.

The applicants called Mr Masters who had, in 1992, been engaged by the applicants and their co-venturers to carry out some environmental studies and to report upon and assess other environmental studies which had been carried out by other people on the two exploration leases.

Mr Masters has a Bachelor of Science obtained in 1971 at the University of Western Australia majoring in geology and zoology. During the nineteen-eighties he was employed by Westralian Sands, which was conducting mineral sand mining operations, as a senior geologist and as the exploration development manager and then as the environmental manager up until 1987. For the next 7 years he was engaged as a private consultant. In 1991 he was commissioned by the applicants and their joint venturer in order to, as he described it, "supervise a base level study of environmental and social issues relating to the Hopelands West project". In that capacity he became involved in discussions with the Serpentine-Jarrahdale Community Liaison Committee which had been established as a means of achieving and facilitating communication and understanding between the local community and the joint venturers. In addition to his employment with Westralian Sands Mr Masters had also been employed by the Department of Fisheries and Wildlife as a wildlife officer in Busselton for 3 years during which time he provided advice to a mining company on matters relating to mining and rehabilitation.

After being employed by Fisheries and Wildlife he then obtained employment with the Department of Conservation and Environment which serviced the Environmental Protection Authority and he had some involvement in assessment of the impact of mining on the Swan Coastal Plain. I am satisfied that Mr Masters' qualifications and experience have provided him with a sound basic scientific understanding and knowledge of sand mining operations and of relevant environmental aspects of such operations. He said that the reports which he had referred to in the report which he had prepared entitled "Pitstone Black Sands of WA Pty Ltd Hopelands Mineral Sands Project. Summary and Consolidation of Consultants' Reports", which was a summary and consolidation of the consultants' reports, had been carried out to his satisfaction and that, in his opinion, sufficient time had been allowed for them to be done properly. He said that he had been given a broad brief to investigate the full range of social and environmental impacts that might be expected to emerge from a sand mining operation in the area in question. His brief was also to discover whether there were any problems which would, in effect, mean that sand mining could not be carried out. His overall assessment was that there were no issues which were of such a nature that they would necessarily preclude a sand mining operation.

During cross-examination Mr Masters agreed that he was unable to say that where in Perth's Bushplan some areas within the ground applied for had been designated as having regional conservation significance those areas did not in fact have that status. He conceded that mining operations would tend to accelerate dieback spread. He also agreed that Yangedi Swamp had a quite high conservation value. Mr Masters' report on the Hopelands Mineral Sands Project was tendered (exhibit 12).

Mr Biggs, an employee of the Department of Minerals and Energy, who is the manager, environment corporations, within the department was called by the applicants. He gave evidence that it is the practice that all mining leases are granted with a condition that the

approval of the State Mining Engineer must be obtained before any productive mining activity can take place. He said that that was done by a well-established procedure which was set out in a departmental publication which he produced (exhibit 14). The publication is entitled "Guidelines to help you get environmental approval for mining projects in Western Australia". It is dated March 1998. At page 1 of the guidelines it is stated (second paragraph):

> "Under the Mining Act 1978, environmental protection and rehabilitation are regulated for land-based operations by the following standard (or similar) conditions applied to:
> • all mining leases (M):
> 'no developmental or productive mining or construction activity being commenced until the tenement holder has submitted a plan of the proposed operations and measures to safeguard the environment to the State Mining Engineer (SME) for assessment and until his written approval has been obtained.'"

The guidelines at page 1 then explain that the "plan of the proposed operations and measures to safeguard the environment" which is referred to in the standard condition is in other places referred to as a Notice of Intent (NOI). The guidelines then continue on page 1 to explain that:

> "In the NOI the proponent assesses the environmental impacts that may arise from the project, determines which are significant and then describes in detail how the company will manage and/or lessen the impacts. In effect, this NOI required under the Mining Act is a comprehensive environmental management document embodying all aspects of environmental risk and impact assessment, and environmental planning and management associated with the proposed mining project."

It is further explained that if the written approval of the SME is obtained that all the commitments set out in the NOI will become conditions on the lease and that the NOI will set out how mining and processing operations and rehabilitation are to be done. During cross-examination Mr Biggs explained that it is the practice of the State Mining Engineer to refer proposals for actual mining operations to the Environmental Protection Authority for assessment in certain circumstances but that in any particular matter the proponents could themselves refer their proposal directly to the EPA. Mr Biggs also made reference to a Memorandum of Understanding ("MOU") which had been entered into between the Environmental Protection Authority ("EPA") and the Department of Minerals and Energy ("DME") in which criteria were set out as a means of identifying which projects were to be referred to the EPA for assessment. He said that the presence of a Bushplan site, while not specifically listed in the MOU EPA referral criteria, would certainly be a factor which would trigger a referral. He did say however that no project had been referred to him which impinged on the Bushplan area so that the question had not really arisen. He also said that there was no departmental policy of actually consulting Bushplan to ascertain the location of Bushplan sites which may be affected by the proposal. What happens, however, is that when any notice of intention ("NOI") is presented then other agencies and

government authorities which have a function in relation to the environment would be consulted with the expectation that such agencies would then bring any environmental concerns to the notice of DME.

Mr Gentle, acting manager, resources assessment branch of the evaluation division of the Department of Environmental Protection was called as a witness by the applicants. Mr Gentle holds the degrees of Bachelor of Science and Master of Science obtained at Auckland University. He explained that the resources assessment branch dealt with assessment of mining proposals which came to the notice of the DEP. Mr Gentle said that the evaluation division, in general terms, deals with the environmental impact assessment of such proposals and dealt most directly with the EPA and assisted the EPA in the conduct of the environmental assessment process including the management of the project referral process. He then explained in some detail the means by which the EPA is made aware by either notification or referral of mining proposals and of the process undertaken after notification or referral, in particular after referral.

Mr Gentle said that within the resources assessment branch there were two employees who had expertise in sand mining and other disciplines but that it was the frequent practice of the department to seek independent expert advice. He said that the usual practice is that mining leases are granted before there is any EPA assessment.

Reports and other Documents Produced in Evidence

PERTH'S BUSHPLAN

This report was referred to by a number of witnesses whilst giving evidence and is a document upon which the objectors place considerable weight. In its foreword Bushplan is described as: "... a major environmental conservation initiative that will bring a whole-of-government approach to meeting the community's needs for conservation and compatible recreation as Perth continues to grow ..." Later in the foreword it is stated:

> "For the Swan Coastal Plain portion of the Perth Metropolitan Region, Perth's Bushplan substantially meets the government's commitment to the 1996 *National Strategy for the Conservation of Australia's Biological Diversity* signed by the heads of government, in that it seeks to establish a representative system of protected areas.
>
> "Under Perth's Bushplan, regional assessments of remnant bushland and associated wetlands have been undertaken according to defined criteria to identify the 52,000 ha of regional significant bushland recommended for protection ... the plan makes recommendations for the protection and management of these sites. According to their values and circumstances, protection might be through reservation under the Metropolitan Region Scheme (MRS), inclusion in a Regional Park, reservation as a Conservation Reserve ... and management by the Department of Conservation and Land Management, protection under Environmental Protection Policies or through an agreement negotiated with a private owner ... recognising the social and economic values attached to land, Perth's Bushplan seeks to achieve a balance that provides for the needs of conservation and development.

> "Although Perth's Bushplan does not cover locally significant bushland, the government is committed to fulfilling its undertakings under the *Urban Bushland Strategy* to support the preparation of local bushland and greenway strategies in consultation with local government and the community."

The Bushplan was released in November 1998 for public comment for a period of 4 months from that time.

In the report it is also noted that Bushplan was prepared with the cooperation of a number of departments and authorities, including DEP and CALM and the Waters and Rivers Commission.

Consistent with the evidence of Ms Keighery it is stated in volume 1 of Bushplan that it updates and replaces the System 6 recommendations for the Swan Coastal Plain portion of the Perth Metropolitan Region.

In volume 1 of Bushplan a number of general recommendations are set out. Of particular relevance to the issues now before me is recommendation 2 which states that:

> "That bushland and associated wetland areas recommended for protection in Perth's Bushplan be progressively provided with protection through suitable mechanisms such as: reservation for Parks and Recreation in the Metropolitan Region Scheme, reservation under the Land Administration Act 1997 and management through the NPNCA or protection under Environmental Protection Policies and wetland protection strategies, or through complimentary mechanisms with landowners or reserve management bodies or negotiated planning solutions with affected owners within 10 years from the date of release of the plan."

The recommendation lists 15 principles by which it is recommended that the implementation of Bushplan be guided. The principles set out include elimination or minimisation of any impacts on regionally significant bushland identified in Bushplan, that Bushplan be used as a basis for planning and environmental approval and assessment decisions, consultation with individual landowners, maximisation of vegetation retention through planning and environmental approval processes in respect of identified Bushplan sites.

Recommendation 5.8 says:

> "Where areas recommended for protection overlie resources of basic raw materials government agencies should seek to minimise the adverse effect of extractive operations and maximise vegetation retention through negotiated planning solutions, while recognising the legitimacy of existing mining approvals, licences, leases and tenements."

Recommendation 5.10 says:

> "That there be a general presumption against clearing bushland containing threatened ecological communities or representation of vegetation complexes of which less than 10 per cent remains in the Perth Metropolitan Swan Coastal Plain."

At page 22 of volume 1 are listed a number of criteria for the selection of regionally significant bushland areas, namely, "representation of ecological communities; diversity; rarity; maintaining ecological processes or natural systems; scientific or evolutionary importance; general criteria for the protection of wetland, streamline and estuarine fringing vegetation and coastal vegetation; criteria not relevant to determination of regional significance, but which may be applied when evaluating areas having similar values."

Volume 2 of Bushplan consists of parts A, B and C, each bearing the date December 1998. Part A is a guide to Bushplan site descriptions and contains an outline of each of the categories of information used to describe the Bushplan sites. Part B contains a description of all Bushplan sites, and part C contains an index of sites by name and number together with maps of all Bushplan sites. At page 229, of volume B site number 378 entitled "Henderson Road Bushland, Peel Estate" is identified and there then follows some regional information under the headings of Landforms and Soils, Vegetation and Flora, Wetlands and Threatened Ecological Communities. Under the last heading it is noted that the area has not been assessed in that respect. On page 230 volume 2 part B appear some very basic "specific site detail(s)" and it is also stated that the site is not listed as having international and national significance. There is a recommendation in the following terms:

> "The most appropriate mechanism for the protection of this Bushplan Site be considered through the public comment period in consultation with the land owner(s)."

I note that under the heading "Specific site detail" it is stated that there has been no assessment (I presume, for purposes of the Bushplan Report) of scattered native plants on the site. Vegetation condition is described as being less than 50 per cent, "excellent to very good", and more than 50 per cent "good to completely degraded with areas of severe localised disturbance". It is also noted that no "significant flora" was recorded.

On page 230 of volume 2 part B there is a description of Bushplan site number 77 entitled "Yangedi Swamp, Keysbrook". That site is described under headings similar to those used in respect of site number 378. It is noted that there has been no assessment or determination of threatened ecological communities, however, there also appears within that category the note "vulnerable (floristic community type 15)". In respect of fauna it is noted that there is no known information and it is also noted that there is no adjacent bushland. It is also recorded that the site "contains plant communities representative of the eastern side of the Swan Coastal Plain". As with site 378, site 77 is recorded as being not listed as having international and national significance. The concluding recommendation is identical to that for site 378.

Bushplan volume 2 part C contains maps of Bushplan sites. Map 100 depicts site 378 extending over an area which takes in the whole of lot 399 Henderson Road, most of lot 164 which is to the north-east of lot 399 and which is where a small airstrip has been constructed; it also takes in what appears to be slightly more than half of lot 400 Henderson Road which adjoins the eastern boundary of lot 399. Part of Bushplan site 77 can also be seen in the lower right-hand corner of map 100 and can be seen that part of lot 77 extends into the ground applied for in M70/740.

DME ENVIRONMENTAL APPROVAL GUIDELINES

At page of the environmental guidelines it is said that the overall approach towards obtaining mining approval is one where the department "sets the objectives and standards but individual operators determine and apply the methods necessary to achieve these outcomes". It is then said: "this is a move towards audited self-management by the mining industry ..." It then states that "The only way a mining company can demonstrate to ... (DME) at the start of a project that the management review is complete and the environmental commitments of a notice of intent will be met, is through some form of management sign-off or corporate endorsement. At the beginning of a new mining project, the NOI and its corporate endorsement together, provide the basis for the DME to trust the company, and replace prescriptive control with audited self-management to predetermined outcome objectives".

The guidelines then describe the way in which the obtaining of approval for projects can be expedited by adopting a procedure which is described as "technical certification". It is also stated in the guidelines that DME will "randomly audit NOIs that have been technically certified. Any not complying with the standards of these guidelines will be discussed with both the mining proponent and the professional association with which the Certifier is registered". The guidelines then set out the steps to be taken to prepare and submit the NOI and to obtain approval to mine. Reference is then made to the MOU between DME and DEP. Part 5 provides information as to the matters which must be addressed in the NOI. Those matters include details of the existing environment including soils, hydrology, flora and fauna and the social environment. A description of the proposed method of operation as to both extraction and processing and tailings disposal is required. Of significance in the present matter, the NOI must include "environmental impact assessment and the management commitments". Under that heading matters such as impacts of land clearing with particular reference to vegetation removal, salinity and hydrology, impacts on local water resource and other users, impacts of hydrological changes on vegetation, disturbance to flora and fauna and whether any restricted rare or threatened species occur in relevant areas, noise, rehabilitation, post-mining land use and pollution, including dust. Social impacts must also be addressed.

MEMORANDUM OF UNDERSTANDING - EPA AND DME

Above the signatures of the chairman of the EPA and the director-general of DME dated 28th April 1995 appears an "endorsement" in which it is stated that the memorandum "clarifies arrangements between the Environmental Protection Authority and the Department of Minerals and Energy, for the protection of the terrestrial environment and

efficient consultation between the two agencies regarding mineral exploration and development proposals situated on conservation reserves and other environmentally sensitive land of Western Australia". There is then a statement to the effect that the EPA does not abrogate its relevant responsibilities.

At page 1 of the MOU the term "mineral exploration and development" is defined as being a reference to "all
activities undertaken on:

- prospecting licences, exploration licences, retention licences, mining leases, miscellaneous licences, and general purpose leases;
- developmental mining proposals;
- productive mining proposals;
- construction activities relating to mining operations."

It is then stated that "The procedures in this MOU are designed to ensure that appropriate conditions for the prevention of environmentally significant impacts are formulated and applied to such tenements". It is further stated that the MOU "... provides an administrative understanding concerning which proposals will be forwarded to the EPA and at what stage the referral is made". It is further stated that the MOU is "... predicated upon the following principles:

- that the Environmental Protection Authority has lead responsibility for environmental protection in the states;
- that the Department of Minerals and Energy has lead responsibility for the management of mineral and petroleum development projects in the state; and
- that the conservation significance of sensitive environments must be recognised when determining the suitability of on-shore mineral exploration and development in these environments."

On page 2 of the MOU objectives (a) to (f) are listed. Those objectives include ensuring protection of sensitive environments, facilitating management processes for referral of proposals, maximising consistency and minimising uncertainty for proponents and the public, ensuring that consultation between EPA, DME and other relevant agencies is initiated as early as possible.

Part 3 is entitled "Procedural Arrangements". It says that the DME is responsible for referral and notification of mining tenements and proposals which occur on environmentally sensitive land in accordance with procedures set out in an attached table. That table (table 1) is entitled "Consultative procedures for Mining Act tenements on environmentally sensitive land". In broad terms, the table sets out the action which is to be taken by DME employees when an application for the grant of a tenement is received or where a notice of intention to mine is received. What is to be done depends upon the

category of land within which the ground applied for falls. The relevant category of land for the present purposes is entitled in table (a) "Other Environmentally Sensitive Areas". Of significance, it appears that in respect of the grant of a mining lease for the approval of mining activity whether or not the matter is referred (as distinct from notified) to the EPA involves a considerable degree of discretion being exercised on the part of the DME officers.

THE ENVIRONMENTAL PROTECTION ACT 1986

Section 3 of the Environmental Protection Act 1986 ("EP Act") contains many definitions of words used in the EP Act, a number of which are relevant to the application of the provisions of the Mining Act. "Decision-making authority" together with "public authority" are defined in such a way as to include the Minister administering the Mining Act, in particular, in respect of the exercise of the Minister's functions and powers in connection with the grant of mining tenements and the imposition of conditions to be imposed upon the grant of mining tenements. The practical effect of that is that where the Minister for Mines exercises any power which he may have pursuant to the provisions of the Mining Act, where the exercise of such power requires him to make a decision in respect of a "proposal" as defined in the EP Act the Minister must exercise those powers or functions subject to any provisions of the EP Act which control or limit or condition the way in which the Minister does so.

Section 4 of the EP Act says that the Act binds the Crown and section 5 says that (save as excepted in section 5) "whenever a provision of this Act is inconsistent with a provision contained in, or ratified or approved by, any other written law the provisions of this Act apply". Section 5 of the EP Act is consistent with section 6(1) of the Mining Act which says that the Mining Act is to be "read and construed subject to the *Environmental Protection Act 1986*, to the intent that if a provision of this Act is inconsistent with a provision of that Act, the first-mentioned provision shall, to the extent of the inconsistency, be deemed to be inoperative".

In section 15 of the EP Act the objectives of the Environmental Protection Authority are specified namely to use the best endeavours of the Authority to protect the environment and prevent, control and abate pollution. Section 16 sets out the functions of the Authority which include conducting environmental impacts assessment, to receive representations on environmental matters, to provide advice on environmental matters and to co-ordinate activities in order to protect, restore or improve the environment. The objectives, powers and functions of the authority are extremely wide-ranging.

Part IV of the EP Act entitled "Environmental Impact Assessment" contains a number of provisions concerning the referral and assessment of proposals (which includes projects, plans, programmes, operations, undertakings or development or changes in land use - section 3 EP Act) and the implementation of proposals. It is unnecessary for me to refer in detail to any of the provisions contained within part IV of the EP Act. They form the basis of the majority of the evidence given by Mr Gentle. Part IV includes sections 38 to 48. A reading of those sections reveals that there are many areas where there may be an exercise of administrative or ministerial discretion based upon information, administrative investigation and evaluation, and administrative practices and policies in respect of which

interested or concerned members of the public may have no knowledge or access to and in respect of which there is an absence or limitation of opportunity for such persons to query or contest.

In particular, there is no opportunity, such as is presented in the proceedings which are now before me under the Mining Act, for parties who are seeking to obtain information about or to oppose a mining or exploration proposal to hear everything that the proponent puts to the Warden in answer to objections to the grant of a tenement rather than to receive an administrative summary of it and also to cross-examine witnesses whom the proponent calls to support the application for the tenement and to produce contradictory or alternative evidence and to make submissions in the light of having heard the proponent's evidence and submissions. The difficulty which all parties, and also the Warden and the Minister are faced with, however, when hearings of the type now before me take place is that it is not unusual for there to be no firm and fully completed proposal for productive mining in place.

THE MINING ACT (1978)

The Mining Act contains a number of provisions which require that holes, trenches and the like must be filled in after operations have ceased and that conditions may be imposed to prevent, reduce or make good injury to the natural surface of the land the subject of a tenement or to anything on the natural surface of that land (eg section 46, section 46A, section 63, section 63AA, section 84). Regulation 98 makes reference to the control of dust. Sections 120F, 120G, 120H and 120I make provision for the appointment of inspectors who have duties and powers in relation to what may be described as environmental matters connected with the grant of and activities on mining tenements.

THE ROLE OF THE WARDEN IN RESPECT OF SECTION 111A AND ENVIRONMENTAL OBJECTIONS

In his reasons for decision in re-Calder (with which Kennedy, White and Wheeler JJ agreed - Pidgeon J dissenting) Steytler J said (pages 22 to 24):

> "I accept that the decision whether or not to grant a mining lease is that of the Minister and the fact that he or she may, under s111A, take the public interest into account in determining whether or not to do so does not inevitably lead to the conclusion that the Warden is obliged to make a recommendation in that regard. However, it is equally true that the fact that the decision is that of the Minister does not mean that the Warden has no role to play in making a recommendation in that respect ...
>
> "As has been pointed out by Alex Gardner in his helpful chapter 'Resource security and integrated management of access to natural resources: the case of minerals in Western Australia' in Gardner (ed) *'The Challenge of Resource Security Law and Policy'*, 1993, 133 at 158, it should not be overlooked that the Warden was always intended to exercise a function of reconciling mining with competing land uses ... it is also noteworthy that, under section 120(1) of the Act, the Warden is required, in considering any application for the grant of

a mining tenement, to take into account the provisions of any town planning scheme in force under the *Town Planning and Development Act 1928* or local laws in force which affect the use of the land concerned. Gardner (at 159) suggests that it is a natural extension of these functions that general public interest environmental issues should be heard by the Warden as well. He says *(ibid)* that environmental objections to mining have been brought to the Warden because there is perceived to be no other forum that is adequate for dealing with them at the stage of tenement applications, by which time there may of course still be no detailed mining proposal.

"Moreover, as Gardner points out (at 159 to 160) in respect of the proposition that the Warden in open court has no discretion in exercising his or her functions:

> This view overlooks the Warden's function of determining conditions for Prospecting Licences and making recommendations on the conditions for Exploration Licences and mining leases. It is clear that the Warden has a discretion to determine conditions for a Prospecting Licence because the tenement application has a right of appeal to the Minister again 'conditions the applicant considers unreasonable'. It stands to reason that the warden has a similar discretion to formulate conditions for recommendation to the minister. The fact that the minister may overturn the warden's decision about conditions does not deny the warden a discretion in formulating conditions, including conditions that may relate to the prevention or repair of injury to the land."'

Steyler J also said (page 37):

> "So far as general policy considerations are concerned, a number of points might be made.
>
> "The first is that the Warden does not have to embark upon a full-scale investigation into environmental or other public policy matters merely because an objection in that respect has been made. She or he may, for example, be satisfied that sufficient protection would be obtained by the application of the provisions of the *Environmental Protection Act.* In that event the Warden may do no more than make a recommendation as to the implementation of measures provided for by that Act."

And at pages 38 to 39:

> "I would add ... that it is especially important to bear in mind that the Warden's function, so far as a mining lease is concerned, is that of assisting the Minister to make a decision about whether or not to grant the lease and, if so, on what conditions. The provision of such assistance from the Warden may or may not require a full hearing in respect of public interest matters and the extent of any such hearing so embarked upon will vary from case to case depending upon all of the prevailing considerations. It will, in each case, be open to the

> Warden to limit the scope of the inquiry should she or he consider that to be appropriate, leaving it to the parties to make fuller representations to the Minister himself or herself or, if that be appropriate, the Warden might, as I have said, make recommendations as to the imposition of conditions which would require those parties to make their respective representations elsewhere."

I agree with the submission of the objector that it is not appropriate for Wardens to adopt a "blanket policy as to whether sufficient protection is offered by the provisions of the EP Act" and that "An assessment of this issue will need to be made in the context of the facts of a particular case".

In addition to the approach which may be taken by the Warden as indicated by Steytler J in re Calder in the passages which I have just quoted it is also important to keep in mind what was said by Franklyn J in ex parte Heaney and by Kennedy J in ex parte French concerning the "filtering" role of the Warden.

It is my opinion that when a Warden is called upon to give consideration, in the context of objections to applications for the grant of mining tenements, to objections which raise matters concerning the "environment" as defined in the Environmental Protection Act section 3(1) and (2), and in the context of assisting the Minister for Mines in the performance of the Minister's duties pursuant to section 111A, the approach to be taken by the Warden is as follows. It is the policy and the objective of the Mining Act to encourage with orderly administration and with due regard to competing interests and values and objectives of other members of the community and other government authorities and agencies, the exploitation of the mineral resources of the State. Potentially competing interests and values and objectives are those concerning the protection and preservation of the environment. It is not the role of the Warden and, with respect, not that of the Minister for Mines in the context of the performance of their respective duties under the Mining Act to proceed upon the basis that the interests of the mining industry should, as a general principle, be given precedence over those whose primary interests or concerns are in respect of the environment. Nor is it the role of the Warden or the Minister to take the opposite view. In broad terms, I consider it to be the role of both the Warden and the Minister to endeavour to ensure that there is optimum exploitation of the mineral resources of the State within the framework laid down by the Mining Act and by all other relevant legislation including, in particular, the Environmental Protection Act. It is clear that it is the Environmental Protection Act which is the primary legislated means by which the environment is to be safeguarded. That is evidenced by the provisions of section 5 of the Environmental Protection Act and section 6 of the Mining Act. The primacy of the EP Act over the Mining Act is recognised by the MOU between the EPA and the DME.

I am of the view that it will generally be more appropriate for a Warden to proceed upon the basis that if all of the provisions of the Mining Act have been complied with, and in some circumstances even where they have not been complied with in respect of applications for the grant of a mining lease, or where the applicant for a mining lease is the holder of a prospecting licence or an exploration licence and, therefore, the provisions of section 75(7) have application and, further, where there are apparently no other matters of "public interest" for the purposes of section 111A, that where "environmental" grounds have been the subject of objections to the grant of a tenement then, unless the Warden is

able to conclude that the ground applied for is over land which is of significant environmental importance and that the land could not be the subject of the grant of a tenement with appropriate conditions being imposed which would protect the environment during the carrying out of the proposed activities and which would ensure the appropriate preservation and continuity of the environment after the cessation of those activities, the Warden should recommend the grant of the tenement subject to the Minister being satisfied that all relevant environmental matters have been properly investigated and that the terms and conditions of the grant will properly and appropriately safeguard the environment.

I am of the opinion that the Warden does not have any option but to recommend either a grant or refusal of the mining tenement and that, in particular, the Warden does not have any discretion to not recommend at all. Section 75(5) of the Mining Act is expressed in mandatory terms, namely, that the Warden "shall" forward his report and recommendation to the Minister. It further directs that that is to be done "as soon as practicable after the hearing of the application".

GROUND 2 OF THE OBJECTION: THE OBJECTORS' SUBMISSION THAT THE APPLICATION FOR MINING LEASES IS PREMATURE

The objectors argue that, because the evidence establishes, and indeed it was conceded by Mr Baxter, that the applicants were not at present in a position where they could commence mining as soon as a grant of a mining lease was made and approval to mine was given and because it was proposed that no mining would be carried out, even if a grant of the mining leases was made, unless a feasibility study established that the ground could be economically mined and that therefore further exploration and a feasibility study needed to be done, it was not appropriate and, indeed, not lawful that mining leases be granted. It was submitted that the introduction of retention licences in 1993 was a legislative indication that mining leases should not be granted except for purposes of "actual mining operations" and, in particular, they should not be granted merely to enable further exploration and feasibility studies to be carried out. It should be noted, as was conceded by the objector, that at the time of the making of the two applications now before me there was no provision in the legislation for the granting of retention licences.

The objectors also argued that even if the Minister could lawfully grant a mining lease where the present intention of the applicants was to continue with further exploration and feasibility studies it would not be in the public interest for such a grant to be made because where there was no firm proposal for mining operations the Warden would be called upon to deal with the application and objections on the basis of generality and hypothesis and, further, if a proposal is in place when the application is made the EPA would be in a position to assess the proposal which may avoid the need for any hearing at all to take place before the Warden. It was also argued that if mining leases could be used primarily for exploration that would tend to delay the commencement of mining operations and increase uncertainty for landholders potentially affected by mining.

I do not accept the objectors' propositions.

It is very common practice for mining leases to be granted where no particulars or details of the proposed method of mining operation have been placed before either the registrar or the Warden or the Minister. That practice is consistent with the practice of making grants which are subject to the standard condition that there will be no developmental mining or construction activity until a plan of proposed operations has been approved by the State Mining Engineer.

The provisions of the Act which specify the manner in which an application for the grant of a mining lease is to be made and determined do not require that, as a matter of course, the applicant need put any general information or any particular information before the registrar or the Warden or the Minister other than basic information which is sufficient to satisfy the registrar on the Warden or the Minister that the essential requirements of the Act have been complied with. That is to be contrasted with the provisions of section 59 of the Act concerning the making of an application for an exploration licence which application must be accompanied by information as to the proposed method of exploration, the details of the programme of work proposed, the estimated amount of money proposed to be spent on exploration, and details as to the technical and financial resources available to the applicant.

The fact that the Mining Act does not expressly, or in my opinion impliedly, impose a condition precedent to the granting of a mining lease that the applicant must satisfy the registrar or the Warden or the Minister by the production of a detailed proposal as to the nature and manner of the proposed mining operations does not mean that the registrar or the Warden or the Minister cannot take into account the fact that there is no such proposal. Section 74(2) of the Act enables either the registrar or the Warden to require the applicant to furnish information in relation to the application or evidence in support of the application and, in my opinion, the Minister would be able to make such inquiries and to require the applicant to provide such information as the Minister thought fit before either granting the application or before deciding what conditions should be imposed upon grant of the tenement. In my opinion it is open to the Minister to make a grant which is subject to the standard "no mining" clause to which I have previously made reference. In my opinion that situation applies whether or not the applicant is within the provisions of section 75(7).

One other factor which may be taken into account and which is present in this case is that the applicants in the past have expended or caused to be expended a considerable amount of money on exploration, they have attracted joint venturers in the past and the evidence does not establish either that they, on their own or with other joint venturers, will not have the capacity to or do not have the intention to mine the leases if the leases are granted and if further studies indicate that mining will be economically viable.

I do not consider that the imposition of the standard "no mining" condition upon the grant of mining leases is an unlawful delegation of the Minister's powers. The Minister is directed by the provisions of the Mining Act to administer the Act (section 10) and he is enabled in his administration of the Act by the provisions of section 11 which provide for that to be done by a public service department of which the State Mining Engineer is an employee and who is ultimately subject to the direction of the Minister.

I am of the opinion that it is not, as a general proposition, contrary to the public interest nor contrary to the policy and intention of the Mining Act to grant mining leases where there is no firm proposal as to the manner of mining and protection of the environment which the applicant is ready and able to immediately embark upon without further exploration or assessment placed before the Minister prior to the time of grant being made, although, in any particular case, it may be contrary to the public interest and to the policy of the Act to do so.

I am of the view that the applications before me do not present a case where it would be contrary to the public interest to grant the tenement merely because it is proposed that initially further exploration and assessment would be carried out and that it is possible that if a mining lease is granted no mining will be carried out.

CONCLUSIONS

My overall impression of the evidence called on behalf of the objectors and the applicants was that there is certainly a need for all of the matters raised by the objectors to be given careful consideration and to be properly investigated and assessed by the Minister for Mines and by other Governmental or statutory authorities and agencies whose statutory obligations are concerned or connected with matters or consequences which will or may arise out of mining operations being carried out on the subject ground. I was not satisfied, however, on the basis of their factual evidence and the opinions expressed in their evidence that this was a case where it could be said that there was no way that a sand mining operation could be carried out in a manner whereby those aspects of the environment to which the evidence was directed could not be adequately and appropriately protected and preserved, where those environmental aspects were of sufficient significance to ensure that they be protected and preserved. It was not possible for me to come to any firm conclusion that any of those elements of the environment upon which the objections were focused, including social impacts, were of such significance that their protection and preservation necessarily or obviously outweighed the desirability of mining operations being carried out by the applicants on at least some part of the ground applied for . That is not to say, however, that I concluded that some aspects of the environment which were the subject of factual evidence and opinion were not of such significance nor that mining operations of the type proposed could be carried out without significant unavoidable and irreparable impacts on the environment. It did appear to me that there were two areas, namely, Bushplan sites 77 and 378 which were of high conservation value and on which there should be no mining and in respect of which there should be imposed conditions upon the grant of any mining leases which are sufficient to ensure that the mining operations do not degrade their present or future conservation value in any way. In specifically referring to those two areas I do not intend thereby to indicate that it is my opinion that there are no other areas of such significant environmental or social importance as to justify a prohibition upon mining on those areas or to justify the imposition of preventative or protective conditions. I consider that if the leases are granted there should be no mining on the land owned and occupied by Baldivis Estates and that conditions should be imposed on the granting of any mining leases which are designed to and are adequate to protect and preserve the commercial operations, present and proposed for the future, connected with that land. I do not have the capacity upon the basis of the evidence before me to suggest what conditions may be appropriate to achieve the objectives I have mentioned above.

I consider that the decision which the Minister for Mines will have to make as to whether or not to grant the mining leases sought by the applicant, and, if the Minister does grant, the conditions which should be imposed is a decision which will be one as to a proposal which for purposes of S.38 of the E.P. Act appears to be likely to have a significant effect on the environment.

In may opinion that the proposal upon which the Minister must decide is one which should be referred, and not merely notified, by the Minister to the EPA in accordance with the provisions of S.38 of the E.P. Act.

RECOMMENDATION TO THE MINISTER

I recommend to the Minister as follows:

1) that, subject to compliance with the provisions of the Environmental Protection Act, mining lease applications 70/729 and 70/740 be granted but that the grant be subject to the standard condition that no developmental or productive mining or construction activity be commenced until the tenement holders have submitted a plan of the proposed operations and measures to safeguard the environment to the state mining engineer for assessment and until his written approval of the plan and measures has been given with the consent of the Minister.

2) that, the land in respect of which the mining leases are granted should not include any part of Baldivis Estates' lots 165, 398 and 399, any part of the land included within Perth's Bushplan site 378 or Perth's Bushplan site 77 or any land adjacent to or in the vicinity of those lots or those sites where it is the opinion of the EPA that the mining of such adjacent land or other land in the vicinity of those lots or sites could not be carried out without unacceptable impacts upon those lots or sites.

3) that, the application for mining leases 70/729 and 70/740 be referred (and not merely notified) to the Environmental Protection Authority pursuant to the provisions of section 38 of the Environmental Protection Act 1986.

4) that, the Minister, when referring the applications to the Environmental Protection Authority pursuant to section 38, furnish the EPA with a copy of the full transcript of the hearing of the application and objections before me with a copy of all maps and other documents produced to me in the course of the hearing and a copy of my report and recommendations.