

ALBERTA ENVIRONMENTAL APPEALS BOARD

Report and Recommendations

Date of Hearing – February 23, 24, and 25, 2004
Date of Report and Recommendations – April 26, 2004

IN THE MATTER OF sections 91, 92, and 94 of the *Environmental Protection and Enhancement Act*, R.S.A. 2000, c. E-12, and section 115 of the *Water Act*, R.S.A. 2000, c. W-3;

-and-

IN THE MATTER OF appeals filed by the Mountain View Regional Water Services Commission, Gerald Oxtoby, the City of Red Deer, Terry Little, and Kelly Smith with respect to *Water Act* Preliminary Certificate No. 00198509-00-00 issued to Capstone Energy Ltd. by the Director, Central Region, Regional Services, Alberta Environment.

Cite as: *Mountain View Regional Water Services Commission et al. v. Director, Central Region, Regional Services, Alberta Environment re: Capstone Energy* (26 April 2004), Appeal Nos. 03-116 and 03-118-121-R (A.E.A.B.).

BEFORE:

Dr. William A. Tilleman, Chair;
Dr. Frederick C. Fisher, Vice Chair; and
Mr. Al Schulz, Board Member.

PARTIES:

Appellants: The Mountain View Regional Water Services Commission, represented by Mr. Jim Romane; Mr. Gerald Oxtoby, Mr. Terry Little, and Mr. Kelly Smith, represented by Mr. Richard Secord, Ackroyd, Piasta, Roth & Day LLP; and the City of Red Deer, represented by Mr. Nick P. Riebeek, Chapman Riebeek.

Certificate Holder: Capstone Energy Ltd., represented by Mr. Alan S. Hollingworth, Q.C., and Ms. Nadine Berge, Gowling Lafleur Henderson LLP.

Director: Mr. David Helmer, Director, Central Region, Regional Services, Alberta Environment, represented by Mr. William McDonald and Ms. Charlene Graham, Alberta Justice.

Intervenors: Mr. Mike Gallie, represented by Mr. Don Bester, Butte Action Committee; the Red Deer County Ratepayer Association; Ms. Dorene Rew; the Council of Canadians (Red Deer Chapter); the Normandeau Cultural and Natural History Society; and Trout Unlimited.

EXECUTIVE SUMMARY

Alberta Environment issued a Preliminary Certificate and associated Proposed Licence to Capstone Energy Ltd. (Capstone) for the diversion of water from the Red Deer River for oilfield injection at SW 4-36-1-W5M near Red Deer, Alberta. The Mountain View Regional Water Services Commission, Mr. Gerald Oxtoby, the City of Red Deer, Mr. Terry Little, and Mr. Kelly Smith (the Appellants) appealed Alberta Environment's decision.

The Appellants argue that fresh water is a scarce resource and it should not be used for oilfield injection. The Appellants believe that once fresh water is injected into the ground in this way, it is gone forever. In considering these appeals, the Board highlights the importance of fresh water; it is essential for human existence and it is a limited resource. The Board is also aware of the importance of the oil and gas industry in Alberta and the work they are undertaking to reduce their use of fresh water in keeping with the principles of sustainable development. The Board must balance the protection of our fresh water supplies with sustaining this essential element of our economy.

With respect to these appeals, the Board accepts the Appellants' argument that when fresh water is injected into the ground in this way it is, for all practical purposes, lost from the hydrologic cycle. Section 2 of the *Water Act*, in our judgment, requires that any use of water resulting in the loss of fresh water should undergo much greater scrutiny. Further, where fresh water is being used in this way, there should be no distinction between surface water and ground water, because the overall effects on the environment are the same.

Based on all of the evidence received in these appeals, the Board has concluded that the Preliminary Certificate and Proposed Licence should be upheld, but subject to a number of changes, including a reduction in the quantity of water and a staggered, shorter term for the licence. The Board encourages the Government to provide direction through an oilfield injection policy that focuses on minimizing the use of fresh water regardless of its source. In the Board's view, if fresh water is going to be used for oilfield injection, the *Water Act* requires that an alternatives analysis be conducted, looking at the technical, economic, and regulatory feasibility of the alternatives and demonstrating that the fresh water will be used not only efficiently, but as the last option considered.

In the Board's view, the amount of water allocated should be reduced to 600 m³/day, for a total allocation of 219,000 m³ annually.* The reduction is consistent with evidence provided by Capstone that 150 m³/day of produced water is possibly available elsewhere and that the amount of water to be used during the first year of the project is less than peak requirements. To encourage the use of alternate water sources, before the Proposed Licence is issued, Capstone should provide Alberta Environment with a report detailing a more complete investigation of alternate water sources. Subject to certain conditions detailed in this Report and Recommendations, the amount of water finally allocated in the Proposed Licence may be further decreased if alternate water sources are available.

In all of the circumstance, even though past policies are contradictory and data is lacking, the Board believes Alberta Environment did its best to consider the effects of the Proposed Licence on other users, including recreational users, and on fish and wildlife. However, as water shortages have occurred in the last number of years, and to protect our aquatic ecosystem, an additional safety margin of 10 percent should be added to the minimum residual flow level. Further, to provide additional protection to other water users, a number of the clauses in the Proposed Licence should be varied to provide greater certainty, particularly in dealing with complaints.

The Board recommends that the Minister order that the term of the Proposed Licence be staggered or phased with shorter terms. In this case, the initial term should be for a one year, and the second term should also be for one year, unless an applicable plan, guideline, or change in regulations provides otherwise. If no applicable plan, guideline or change in regulations is in place after the second one year term, any subsequent renewals of the Proposed Licence should not exceed a term of three years. Every renewal of the Proposed Licence should require that an alternatives assessment be conducted based on a list of criteria that should be part of the application process.

* The Preliminary Certificate and Proposed Licence issued to Capstone allows for a diversion of 328,500 m³ annually, at a maximum diversion rate of 900 m³/day.

TABLE OF CONTENTS

| | | |
|------|---|----|
| I. | INTRODUCTION | 1 |
| II. | PROCEDURAL BACKGROUND..... | 4 |
| III. | SUBMISSIONS | 7 |
| A. | Mountain View Regional Water Services Commission..... | 7 |
| B. | Mr. Gerald Oxtoby, Mr. Terry Little, and Mr. Kelly Smith..... | 8 |
| C. | City of Red Deer | 11 |
| D. | Mr. Mike Gallie | 13 |
| E. | Certificate Holder..... | 14 |
| F. | Director | 18 |
| G. | Intervenors | 21 |
| IV. | CLOSING ARGUMENTS | 25 |
| A. | Mountain View Regional Water Services Commission..... | 25 |
| B. | Mr. Gerald Oxtoby, Mr. Terry Little, and Mr. Kelly Smith..... | 26 |
| C. | City of Red Deer | 29 |
| D. | Mr. Mike Gallie | 30 |
| E. | Certificate Holder..... | 30 |
| F. | Director | 34 |
| V. | DISCUSSION AND ANALYSIS..... | 38 |
| A. | The <i>Water Act</i> | 39 |
| B. | What role does the purpose for which the water will be used have with respect to the allocation of water under the <i>Water Act</i> ? (Issue 1(a))..... | 43 |
| C. | Is the use of water for oilfield injection a valid reason to refuse to grant an allocation under the <i>Water Act</i> ? (Issue 1(b)) | 45 |
| D. | Has the Director adequately balanced the economic benefits and environmental impacts of the project? (Issue 1(c)) | 46 |
| E. | Has the Director adequately considered alternatives to the use of water for this project, including the economics of those alternatives? (Issue 1(d)) | 48 |

| | | |
|-------|--|----|
| F. | Has the Director adequately considered the removal of the allocated water from the hydrological cycle? (Issue 1(e))..... | 58 |
| G. | Does the Preliminary Certificate and Proposed Licence provide adequate protection for: 1) other water users, 2) recreational water users, 3) fish and wildlife, and 4) the aquatic environment, including instream flow needs? (Issue 2(a))..... | 60 |
| H. | Are the Terms and Conditions of the Preliminary Certificate and Proposed Licence adequate with respect to: 1) monitoring, 2) reporting, 3) minimum flow rates, and 4) maximum pumping rates? (Issue 2(b))..... | 63 |
| I. | Is the term of the Proposed Licence appropriate? (Issue 2(c))..... | 65 |
| J. | Are the renewal mechanisms related to the Proposed Licence appropriate? (Issued 2(d))..... | 68 |
| K. | Is the volume of water allocated appropriate, including taking into account the proposed length of the project and the availability of water in the Red Deer River? (Issue 3(a))..... | 68 |
| L. | Has the Director adequately considered the impact of this allocation on future water users, including the future needs of municipalities? (Issue 3(b))..... | 70 |
| M. | Should the volumes of water be allocated in some staged manner? (Issue 3(c))..... | 70 |
| N. | Has the Director adequately considered the potential impacts of the project on immediate neighbours to the project, being Mr. Oxtoby, Mr. Little, and Mr. Smith? (Issue 4(a))..... | 70 |
| O. | Was the testing undertaken sufficient and adequate to predict the long term impacts of the project on immediate neighbours? (Issue 4(b))..... | 72 |
| P. | Do the immediate neighbours to the project have adequate protection in the event there is an impact on them? (Issue 4(c))..... | 73 |
| Q. | Has the Director properly taken into account all the applicable policies of the Government of Alberta? (Issue 5(a))..... | 73 |
| R. | Do the Preliminary Certificate and Proposed Licence adequately allow for any changes regarding the policy direction on oilfield injection? (Issue 5(b). | 74 |
| S. | Has the Director adequately taken into account the sustainability of the Red Deer River Basin and the South Saskatchewan River Basin? (Issue 5(c))..... | 75 |
| VI. | CONCLUSIONS..... | 75 |
| VII. | RECOMMENDATIONS..... | 84 |
| A. | General Recommendations..... | 84 |
| B. | Specific Recommendations..... | 85 |
| VIII. | COSTS..... | 87 |
| IX. | DRAFT MINISTERIAL ORDER..... | 88 |

I. INTRODUCTION

[1] This is the Environmental Appeals Board's (the "Board") Report and Recommendations to the Minister of Environment¹ regarding five appeals opposing an allocation of fresh water² to Capstone Energy Ltd. (the "Certificate Holder"). The Certificate Holder intends to use the fresh water for "oilfield injection," which is the injection of water into an oil-bearing geological formation to enhance the amount of oil that can be recovered.³ The parties that have filed appeals represent a broad range of interests, but share the common view that fresh water is a scarce resource and should be rarely used, if at all, for oilfield injection. The fundamental basis of their objection is the contention that once the fresh water is injected into an oil-bearing formation, the fresh water is gone forever. This conflict is representative of a broader issue that is currently being examined by Alberta society as a whole: How can we best use our dwindling water resources in times of increasing demand?⁴

¹ Sections 99 and 100 of the *Environmental Protection and Enhancement Act*, R.S.A. 2000, c. E-12 ("EPEA"), provide:

"99(1) ...the Board shall within 30 days after the completion of the hearing of the appeal submit a report to the Minister, including the recommendations and the representations or a summary of the representations that were made to it. ...

100(1) On receiving the report of the Board, the Minister may, by order,

- (a) confirm, reverse or vary the decision appealed and make any decision that the person whose decision was appealed could make, ...
- (c) make any further order that the Minister considers necessary for the purpose of carrying out the decision."

² *Water and Oil: An Overview of the Use of Water for Enhanced Oil Recovery in Alberta* (Government of Alberta, March 2004), at page 22 defines non-saline water as water "...with less than 4000 mg/l of total dissolved solids (TDS). Often referred to as fresh water." Fresh water has been defined as "...water having bacteriological, physical, and chemical properties which make it suitable and feasible for beneficial use for any lawful purpose." *Injection Well Act, 27 Texas Water Code*, s. 27.002(8). Fresh water has also been defined as "... water which has less than five thousand (5,000) parts per million total dissolved solids. All other water is salt water." *785 Oklahoma Administrative Code s.785-30-2*.

³ M.M. Schumacher, ed., *Enhanced Oil Recovery: Secondary and Tertiary Method* (New Jersey: Noyes Data Corporation, 1978) at page 17 states:

"When first brought into production, most oilfields have sufficient natural forces to push their oil out of the oil-bearing rock and into the new wells. ... These natural forces are soon depleted, however, and the oil production rate will drop sharply if secondary oil recovery techniques are not applied. In the secondary recovery phase the oilfield operator aids the natural pressure forces by injecting gas or flooding the oil reservoir with water."

Water and Oil: An Overview of the Use of Water for Enhanced Oil Recovery in Alberta (Government of Alberta, March 2004), at page 22 defines oilfield injection as the process "...in which water, with or without another injectant (hydrocarbon solvent or CO²), is injected through wells into conventional hydrocarbon reservoirs to increase or maintain the reservoir pressure so that hydrocarbon recovery is increased."

⁴ In November 2001, the Government of Alberta began a province-wide public consultation to develop a

[2] Alberta has been referred to some as “God’s Country”, blessed with an unparalleled environment, abundant natural resources, and a burgeoning economy that have made it one of the best places in the world to live. This juxtaposition of the environment and the economy is at the heart of the matter before the Board; the Board must balance protection of our environment and continuing to support economic growth.⁵ In undertaking this balancing exercise, the Board recognized the critical importance that the oil and gas industry plays in Alberta; the development of our oil and gas resources is largely responsible for the high quality of life that Albertans enjoy. The Board also recognizes the work that the oil and gas industry has undertaken to be environmentally responsible and reduce their reliance on fresh water; we commend them for this.⁶

[3] The task before the Board is to balance protection of our water supply with the needs of the oil and gas industry, taking into account sustainable development principles. Fresh water is essential for human existence: we need it to drink, we need it to grow our food, and we

provincial water strategy. In November 2003, the Government released *Water for Life: Alberta’s Strategy for Sustainability* (“Water for Life”). One of the concerns identified by a number of Albertans in the Water for Life process was the use of fresh water for oilfield injection. In response to this concern, the Minister of Environment appointed an Advisory Committee on Water Use Practice and Policy (the “Advisory Committee”). The mandate of the Advisory Committee is to “...identify issues, examine alternative options and approaches, and to prepare recommendations for the Minister on the general topic of practices that remove water from the hydrologic cycle, including oilfield injection.”

⁵ Section 2 of the *Water Act* provides:

“The purpose of this Act is to support and promote the conservation and management of water, including the wise allocation and use of water, while recognizing:

- (a) the need to manage and conserve water resources to sustain our environment and to ensure a healthy environment and high quality of life in the present and the future;
- (b) the need for Alberta’s economic growth and prosperity;
- (c) the need for an integrated approach and comprehensive, flexible administration and management systems based on sound planning, regulatory actions and market forces;
- (d) the shared responsibility of all Alberta citizens for the conservation and wise use of water and their role in providing advice with respect to water management planning and decision-making;
- (e) the importance of working co-operatively with the governments of other jurisdictions with respect to transboundary water management;
- (f) the important role of comprehensive and responsive action in administering this Act.”

⁶ For example, the Board acknowledges, to the Certificate Holder’s credit, that it has reduced its application for water from 1000 to 900 m³/day. Further, according to *Water and Oil: An Overview of the Use of Water for Enhanced Oil Recovery in Alberta* (Government of Alberta, March 2004), at pages 4 and 11, water diverted for the oil and gas sector

“...has declined from 88.7 million cubic metres in 1973 to 47.5 million cubic metres in 2001 - 37 million cubic was fresh water and 10.5 million cubic metres was saline or brackish water. ... Surface water sources provided 26.9 million cubic metres (72.5 percent) of the total non-saline water while the remaining 10.2 million cubic metres (27.5 percent) was sourced from ground water.”

need it live. This has been aptly described in the title of the Government of Alberta's policy review: Water for Life. At the same time, we also need the oil and gas industry. It has been said that, at least in Alberta, a loaf of bread is actually made of oil (along with the hard work of those in the agriculture industry). Most Albertans are dependent on the oil industry in some way to pay their bills and buy their food.

[4] These appeals have resulted in one of the most difficult "balancing act" cases to come before the Environmental Appeals Board in its ten plus years of existence. We are effectively being asked to choose between competing purposes of water use. In keeping with the importance of this task, luckily the participants before the Board represent almost all parts of Alberta society. The oil industry, which we have already discussed, is being represented by the Certificate Holder, and the general public interest is being represented by the Director, Central Region, Regional Services, Alberta Environment (the "Director").

[5] The agriculture industry is being represented by Mr. Gerald Oxtoby, Mr. Terry Little, and Mr. Kelly Smith (the "Landowners"). They appear before the Board representing their own interests as the project's immediate neighbours and as people whose very livelihood is dependent on a stable and secure water supply. However, they also remind us of the importance of the agriculture industry as a cornerstone of the Alberta economy and our way of life; the agriculture industry literally provides the food that we eat. The Board is also keenly aware of the dependence of the agriculture industry on sustainable supplies of water; the agriculture industry would not be able to function without water. The Board is also aware that the agriculture industry in Alberta has been faced with many challenges in the last number of years, including significant water shortages of its own.

[6] Alberta's municipalities are also represented before the Board by the City of Red Deer and the Mountain View Regional Water Services Commission (the "Water Services Commission"), which provides water to a number of municipalities in the Red Deer area.⁷ The municipalities that have come before the Board have three fundamental interests: ensuring a sustainable and dependable water supply for the people that they serve, ensuring a sufficient

⁷ The Mountain View Regional Water Services Commission provides municipal water to the Town of Bowden, the Town of Carstairs, the Town of Crossfield, the Town of Didsbury, the Town of Innisfail, and the Town of Olds.

water supply for their continued economic growth,⁸ and preserving the natural environment to support the quality of life that their citizens desire. The Board recognizes that the municipalities in Alberta have been faced with the challenges of both population and economic growth, and the pressure that this places on sustaining their infrastructure, including their water supplies.

[7] The others before the Board represent a broad range of interests from recreational users such as Mr. Mike Gallie, Trout Unlimited, and the Normandeau Cultural and Natural History Society (“Normandeau”) to individual citizens such as Ms. Dorene Rew to groups of citizens such as the Red Deer County Ratepayer Association (the “Ratepayer Association”) and the Council of Canadians (Red Deer Chapter) (the “Council of Canadians”). The Board has had the benefit of the full input from all of these parties, and have looked at their evidence whether or not we have cited it, in making its Report and Recommendations to the Minister of Environment on this important matter.

II. PROCEDURAL BACKGROUND

[8] On July 23, 2003, the Director, issued Preliminary Certificate No. 00198509-00-00 (the “Certificate”), including a Proposed Licence (the “Proposed Licence”), under the *Water Act*, R.S.A. 2000, c. W-3, to the Certificate Holder.⁹ The Proposed Licence, once issued, would allow for the diversion of 328,500 m³ of water annually, at a maximum daily rate of 900 m³, from the Red Deer River by way of an infiltration well (with a production interval of 0-7.43 m) in the fluvial gravel formation at SW 4-36-1-W5M, near Red Deer, Alberta (the “Well”).

[9] Between August 15 and August 25, 2003, the Board received Notices of Appeal from the Water Services Commission (Appeal No. 03-116), Mr. Gerald Oxtoby (Appeal No. 03-

⁸ The “Highway 2 Corridor” has been identified one of North America’s economic powerhouses. As stated by Mayor Gail Surkan:

“Red Deer is privileged to be one of the strongest growth communities in Canada. And it's now positioned on the Highway 2 corridor in the very centre of the strongest growth basin arguably on the continent right now. ... We are acknowledged by those that are watching as the strong economic system of the continent as North America's emerging economic tiger, I think is how the TD Economics group phrased it.” Transcript, February 23 to 25, 2004, at page 178 lines 1 to 6 and 15 to 19.

⁹ The Certificate specifies certain conditions, and promises that a licence (the Proposed Licence) will be issued upon meeting these conditions. The Proposed Licence is attached to and forms part of the Certificate. The terms and conditions of the Proposed Licence are appealable as part of these appeals. See: section 66(4) of the *Water Act*. Where a preliminary certificate and proposed licence have been issued, the only opportunity to appeal

118), the City of Red Deer (Appeal No. 03-119), Mr. Terry Little (Appeal No. 03-120), and Mr. Kelly Smith (Appeal No. 03-121) (collectively the “Appellants”).¹⁰

[10] The Board wrote to the Certificate Holder and the Director notifying them of the appeals and wrote to the Appellants acknowledging receipt of the Notices of Appeal. The Board requested that the Director provide the Board with a copy of the records (the “Record”) relating to this appeal.¹¹ Further, according to standard practice, the Board wrote to the Natural Resources Conservation Board and the Alberta Energy and Utilities Board (the “AEUB”) asking whether this matter had been the subject of a hearing or review under their respective legislation. Both boards responded in the negative.

[11] The Board received a number of Stay requests from the Appellants.¹² Following its review of submissions on the Stay requests, the Board notified the Parties that it would not grant a Stay as the requests were premature.¹³

the terms and conditions of the proposed licence is as part of an appeal of the preliminary certificate. See: sections 115(1)(b) and (c) of the *Water Act*.

¹⁰ The Board also received Notices of Appeal from the Butte Action Committee/Mr. Mike Gallie (Appeal No. 03-122), Mr. Mike Gallie (Appeal No. 03-123), and Ms. Dorene Rew (Appeal No. 03-138). These Notices of Appeal were dismissed, however as the Board was of the view that Mr. Gallie has personal knowledge regarding the Red Deer River that may be of assistance to the Board, he was granted full party status. See: Preliminary Motions: *Mountain View Regional Water Services Commission et al. v. Director, Central Region, Regional Services, Alberta Environment re: Capstone Energy* (11 February 2004), Appeal Nos. 03-116 and 03-118-123-ID1 (A.E.A.B.) and *Rew v. Director, Central Region, Regional Services, Alberta Environment re: Capstone Energy* (30 October 2003), Appeal No. 03-138-D (A.E.A.B.). The “Parties” for these appeals are: the Certificate Holder, the Director, the Water Services Commission, Mr. Oxtoby, the City of Red Deer, Mr. Little, Mr. Smith, and Mr. Gallie.

¹¹ The Board received a package of documents from the Director on August 22, 2003, and additional documents on September 2, 2003, collectively these documents form the Record. Copies of the Record and the additional documents were then provided to all of the other Parties to these appeals.

¹² Stay requests were received on August 26, 2003 from the Water Services Commission, on August 28, 2003 from Mr. Gerald Oxtoby, on August 29, 2003 from the City of Red Deer, and on September 2, 2003 from the Butte Action Committee on behalf of itself, Mr. Mike Gallie, Mr. Kelly Smith, and Mr. Terry Little.

¹³ On September 18, 2003, the Board stated:

“The persons that filed appeals are concerned that if Capstone is allowed to take the water authorized by the Preliminary Certificate, then their water supply may be harmed in some way... The Board notes that the Preliminary Certificate that is under appeal promises Capstone Energy Ltd. a Licence to divert water, once it has met certain conditions. As a result, Capstone may not take any water until these conditions are met. Once these conditions are met, Capstone must submit, and Alberta Environment must accept, a Certificate of Completion. It is only once this Certificate of Completion has been filed and accepted that Capstone may take water. Therefore, until Capstone is allowed to take water, it is not possible for the ‘irreparable harm’ to occur. Without an immediate possibility of irreparable harm, the request for a Stay is premature.”

On September 19, 2003, the Board received a reconsideration request from the Butte Action Committee regarding its Stay decision. On October 10, 2003, the Board wrote to the Parties regarding the reconsideration request regarding the Stay and stated:

[12] Following a Preliminary Meeting, the Board notified the Parties of the issues to be heard at the Hearing.¹⁴ The Board then scheduled a process for the Parties to provide affidavits, rebuttal affidavits, and submissions on these issues in preparation for the Hearing.

“The Board notes that Capstone has agreed not to undertake any work in relation to the Preliminary Certificate until the appeal has concluded. Therefore, it is the Board’s view that it is not necessary for it to consider the Stay re-consideration requests at this time.”

¹⁴ The issues set for the Hearing were:

- “1. Purpose
 - a. What role does purpose for which the water will be used have with respect to the allocation of water under the *Water Act*?
 - b. Is the use of water for oilfield injection a valid reason to refuse to grant an allocation of water under the *Water Act*?
 - c. Has the Director adequately balanced the economic benefits and environmental impacts of this project?
 - d. Has the Director adequately considered alternatives to the use of water for this project, including the economics of those alternatives?
 - e. Has the Director adequately considered the removal of the allocated water from the hydrological cycle?
2. Protection
 - a. Does the Preliminary Certificate and Proposed Licence provide adequate protection for: (1) other water users, (2) recreational users, (3) fish and wildlife, and (4) the aquatic environment, including instream flow needs?
 - b. Are the terms and conditions of the Preliminary Certificate and Proposed Licence adequate with respect to: (1) monitoring, (2) reporting, (3) minimum flow rates, and (4) maximum pump rates?
 - c. Is the term of the Proposed Licence appropriate?
 - d. Are the renewal mechanisms relating to the Proposed Licence appropriate?
3. Volume
 - a. Is the volume of water allocated appropriate, including taking into account the proposed length of the project and the availability of water in the Red Deer River?
 - b. Has the Director adequately considered the impact of this allocation on future water users, including the future needs of municipalities?
 - c. Should the volumes of water be allocated in some staged manner?
4. Immediate Neighbours
 - a. Has the Director adequately considered the potential impacts of the project on the immediate neighbours to the project, being Mr. Oxtoby, Mr. Little, and Mr. Smith?
 - b. Was the testing undertaken sufficient and adequate to predict the long-term impacts of the project on the immediate neighbours?
 - c. Do the immediate neighbours to the project have adequate protection in the event that there is an impact on them?
5. Policy Considerations
 - a. Has the Director properly taken into account all the applicable policies of the Government of Alberta?
 - b. Do the Preliminary Certificate and Proposed Licence adequately allow for any changes regarding the policy directions on oilfield injection?
 - c. Has the Director adequately taken into account the sustainability of the Red Deer River Basin and the South Saskatchewan River Basin?”

[13] Between January 30 and February 2, 2004, the Board received intervenor requests from the Red Deer County Ratepayer Association, Ms. Dorene Rew, the Council of Canadians (Red Deer Chapter), the Normandeau Cultural and Natural History Society, and Trout Unlimited (collectively the “Intervenors”). The Board provided the Parties with an opportunity to respond to the intervenor requests.

[14] On February 9, 2004, the Board notified the Parties and the Intervenors that each of the Intervenors could participate by written submissions only. Some of the Intervenors advised the Board that the deadline for providing written submissions was unreasonable and requested further time to prepare their submissions. On February 12, 2004, the Board notified the Parties and the Intervenors that it would grant the Intervenors an extension to the filing deadline, and each Intervenor would be allotted ten minutes to speak at the Hearing.

[15] The Hearing was held on February 23 to 25, 2004, and closing arguments were received in writing between March 5 and 25, 2004. Prior to the start of the Hearing and at the Hearing, the Board received and addressed a number of preliminary motions. The Board will address these preliminary motions in a separate decision.

III. SUBMISSIONS

A. Mountain View Regional Water Services Commission

[16] The Water Services Commission draws water from the Red Deer River and provides water to Bowden, Carstairs, Crossfield, Didsbury Innisfail, and Olds.¹⁵ The Water Services Commission stated the Certificate Holder’s “...intended use of water conflicts with all of the concepts outlined in the Province of Alberta’s Water Strategy and the current direction of the Petroleum Industry.”¹⁶ It argued the injection of water is for the sole economic benefit of the Certificate Holder. The Water Services Commission argued that the Director should have required a better investigation of alternatives and should have made the investigation report available to the public.

¹⁵ See: Affidavit of Mr. Jim Romane, dated January 2004.

¹⁶ Water Services Commission’s submission, dated February 10, 2004.

[17] The Water Services Commission argued that adequate protection has not been included in the Certificate and Proposed Licence for other water users, recreational users, fish and wildlife, and the aquatic environment. It stated that the term of the Proposed Licence and the renewable mechanism are not adequate.

[18] The Water Services Commission stated the volume of water proposed (900m³/day) is the same volume that the Town of Didsbury, with a population of approximately 3,000, uses daily. However, according to the Water Services Commission, the Town of Didsbury returns 100 percent of the water back to the hydrologic cycle¹⁷ to be “used an infinite number of times,” and therefore, the net effect of the municipal use of water is “nil” in comparison to oilfield injection. It stated the total amount of water that would be lost from the hydrologic cycle over a 20-year period would be 1,445,000,000,000 gallons.

[19] The Water Services Commission argued that the Director did not consider the long-term impacts of the water use on the neighbours and the present water users. It recommended the *use of water* should be “...an element of priority for future consideration of water licences...”¹⁸ and stated that the application should be placed in abeyance until the Minister of Environment releases the Advisory Committee’s report.

B. Mr. Gerald Oxtoby, Mr. Terry Little, and Mr. Kelly Smith

[20] Mr. Smith, Mr. Little, and Mr. Oxtoby own or occupy the land neighbouring or immediately downstream of the Well.¹⁹ They raise cattle on these lands and require a dependable and sustainable water supply for their livelihood.

[21] The Landowners submitted the Director has discretion under the *Water Act* to determine what considerations are relevant in the circumstances.²⁰ They stated wise allocation of

¹⁷ The hydrologic cycle has been described as follows: Water evaporates from the oceans, lakes, streams, and reservoirs and returns to the land as rain or snow. Some of the rain or melted snow will flow overland to a stream channel. If the soil is porous, some of the moisture will seep into the ground through infiltration. As plants use water, it is transpired as vapour into the atmosphere. Water in the soil is pulled downward by gravity, and at some depth, the pores of the soil will be saturated with water. The top of the area of saturation is referred to as the water table, and the water within the zone of saturation is ground water. Ground water can flow through the rock and soil until it discharges as a spring or enters into a pond, stream, lake, river, or ocean, where again it will evaporate and the cycle repeats. See: Exhibit 6: The Hydrologic Cycle.

¹⁸ Water Services Commission’s submission, dated February 10, 2004.

¹⁹ See: Landowner’s submission, dated February 13, 2003, at paragraph 1.

²⁰ See: *Water Act*, section 51(4).

Alberta's water resources requires an analysis of the purpose of the water use, whether that purpose is laudable as it relates to other water users, and whether the aquatic environment is being sustained.²¹ The Landowners submitted the terms of the *Water Act* require the Director to consider the purpose of using water for oilfield injection when deciding whether a licence should be issued as the purpose is relevant to the proper management of Alberta's water resources. According to the Landowners, the law and policy support this proposition.

[22] The Landowners argued that the Director, under section 51(1) of the *Water Act*, has the discretion to refuse to issue a preliminary certificate or licence in relation to existing, potential, or cumulative effects of the proposed diversion, or any other matter the Director may consider relevant.²² The Landowners submitted these considerations are directly affected by the purpose of the water use, and therefore, it is a valid reason to refuse to issue a preliminary certificate or licence.

[23] The Landowners argued that the Director has "...not adequately balanced the economic benefits and environmental impacts of the project, as there was no evidence of economic benefit to Capstone [(the Certificate Holder)] or to Albertans as a whole...."²³ The Landowners submitted the Director did not adequately consider alternatives to the proposed water diversion since the Certificate Holder's investigation into alternatives was largely based on conjecture.²⁴ The Landowners also submitted the Director did not adequately consider the removal of water from the hydrologic cycle.

[24] The Landowners stated the terms and conditions of the Certificate and the Proposed Licence do not provide adequate protection for other water users and are not adequate with respect to monitoring and reporting requirements. They submitted that the monitoring should be extended to include nearby surface water and ground water on their lands.

[25] The Landowners submitted the term of the Proposed Licence should be less than five years to be able to respond to climatic variation, the South Saskatchewan River Basin Water

²¹ See: Landowner's submission, dated February 13, 2003, at paragraph 10.

²² Section 51(1) of the *Water Act* provides:

"On application for a licence by a person in accordance with this Act, the Director may ... issue or refuse to issue (a) preliminary certificate to that person, or (b) a licence to that person for (i) the diversion of water, or (ii) the operation of that works, for a purpose specified in the regulations."

²³ Landowner's submission, dated February 13, 2003, at paragraph 17.

²⁴ See: Landowner's submission, dated February 13, 2003, at paragraph 22.

Management Plan (“SSRBWMP”) as it evolves, and advice or policies arising from the Advisory Committee.

[26] The Landowners submitted the volume of water allocated is excessive and a “...more gradual approach to oilfield injection should be taken.”²⁵ They argued the Director has not adequately considered the impact of the allocation on future water users, and the Red Deer River is to have the largest increase in use in the future, with a large portion of it being that of the municipalities.

[27] The Landowners submitted the Director did not adequately consider the impact of the project on both ground water and surface water on adjacent properties. They argued the Certificate Holder considered only the ground water on neighbouring lands and did not look at the potential effects of its project on the sloughs and dugouts on the Landowners’ properties. The Landowners explained the dugouts and sloughs are used to contain surface water and are used by their cattle. According to one of the Landowners, Mr. Kelly Smith, one of his sloughs “...is directly connected to the hydrological effects of the river and adverse impacts may occur if nearby surface or ground water supplies are reduced.”²⁶

[28] The Landowners submitted they do not have adequate protection in the event there is an adverse impact on their water supplies, as any adverse impact could immediately affect their cattle and their livelihood. They stated the remedies provided in the *Water Act* or the Certificate or Proposed Licence “...lack the rapid response these Appellants would require to preserve their cattle operations.”²⁷

[29] The Landowners submitted the Director did not take into account all of the applicable policies. They argued the Director failed to consider future allocations, impacts on the riparian and aquatic environment, and forecasted uses in the South Saskatchewan River Basin as stated in the reports included as part of the SSRBWMP. The Landowners further argued the terms of the Certificate and Proposed Licence do not adequately provide for changes regarding the policy directives on oilfield injection. They stated the terms and conditions do not provide for the Proposed Licence to be amended or cancelled depending on the Advisory Committee’s

²⁵ Landowner’s submission, dated February 13, 2003, at paragraph 44.

²⁶ Landowner’s submission, dated February 13, 2003, at paragraph 53.

²⁷ Landowner’s submission, dated February 13, 2003, at paragraph 58.

recommendations or the SSRBWMP, and policy changes cannot be effectively dealt with through the renewal provisions or through the extremely limited and rarely used cancellation provisions provided by the *Water Act*.

[30] The Landowners submitted the sustainability of the Red Deer River and South Saskatchewan River basins have not been adequately considered by the Director. According to these Appellants, the SSRBWMP indicates that the current and forecasted water use in the basin is not sustainable.

C. City of Red Deer

[31] The City of Red Deer argued the Director failed to comply with the spirit, intent, and specific requirements of the *Water Act*, and he should not have issued the Certificate. It submitted that the Certificate Holder did not provide the necessary information regarding alternatives to the use of water and the economics of those alternatives, and based on this reason, the Director ought not to have issued the Certificate.

[32] The City of Red Deer argued the "...Director failed to adequately consider the impact of the removal of the allocated water from the water cycle, failed to provide sufficient protection to other users present and future, failed to take into account the proposed length of the project and the availability of water in the Red Deer River on a cumulative basis and failed to consider at all, or to take into account, the sustainability of the Red Deer River Basin and the South Saskatchewan River Basin."²⁸

[33] The City of Red Deer argued the Director failed to consider those matters he may consider under section 66(3)(b) and (c) of the *Water Act*. The City argued that alternatives and the cost and profitability of alternatives are valid considerations that should be dealt with by the Director.

[34] According to the City, the table included in the report, entitled *Assessment of Source Water Options for the Tindastoll Belly River Oil Pool Waterflood* ("Source Water Options Report"), justifying the proposed use of surface water from the Red Deer River does not provide any supporting material to indicate on what facts the expected costs were based. The

²⁸ City of Red Deer's submission, dated February 13, 2004, at paragraph 6.

City questioned the statement that the Certificate Holder had investigated the use of CO₂ as an alternative and found that a supply of such fluids was not available in the region. The City of Red Deer stated that it was aware of companies in the Central Region that have purchased CO₂ from a plant at Joffre, immediately northeast of Red Deer.²⁹

[35] The City argued the Certificate Holder declined or refused to provide information that bears on the true economic impact of alternative methods to the use of water. It argued the "...Director has failed to inquire, and the Company has failed to provide, the core information impliedly mandated by the *Water Act* in order to evaluate whether the application represents a wise allocation and use of water as required by the *Water Act*."³⁰

[36] The City of Red Deer stated a number of municipalities, including Red Deer, Lacombe, Penhold, Innisfail, Olds, Didsbury, Crossfield, Carstairs, Bowden, and Ponoka, have expressed concern about the sustainability of the Red Deer River and South Saskatchewan River basins in relation to the Certificate Holder's water use. In particular, the City stated the municipalities have concern the cumulative removal of water out of the water cycle from the Red Deer River in this way will undoubtedly impact the needs of the municipalities.

[37] The City submitted that industrial use represents only one of many uses and should not be given any sense of priority.³¹ It stated the Director's approach "...gives the impression that industry has a clear priority not contemplated by the Act or the regulation,"³² and it appears the Director is acting as an advocate in support of industry only. It explained this occurs because the Director refers only to those things he must consider under section 66(3), thereby inadvertently creating a "...culture of priority to industry since on an industry application, the Director does not consider the overall purposes of the *Water Act* or section 66.3 (c)(iii) of the *Water Act* which pertain inevitably to other water users including municipalities."³³

[38] The City of Red Deer explained the Red Deer River serves numerous communities through four regional water lines and at least four other regional systems are in stages of study and planning. The City stated the municipalities return a good percentage of the

²⁹ See: City of Red Deer's submission, dated February 13, 2004, at paragraphs 31 and 32.

³⁰ City of Red Deer's submission, dated February 13, 2004, at paragraph 39.

³¹ See: City of Red Deer's submission, dated February 13, 2004, at paragraph 49.

³² City of Red Deer's submission, dated February 13, 2004, at paragraph 50.

³³ City of Red Deer's submission, dated February 13, 2004, at paragraph 50.

water taken back to the source, and future applicants for water from the Red Deer River clearly have a much higher potential to better serve the public interest since these water uses will serve communities who will return much of the water to the system.³⁴ The City of Red Deer submitted the water needs and water supplies are ever changing, and given the growth in Alberta and all of the challenges of meeting water needs and resources, "...oilfield injection of potable surface water is a bad practise."³⁵ It argued the Certificate should be cancelled and the Proposed Licence not be issued since the application was flawed.

D. Mr. Mike Gallie

[39] Mr. Mike Gallie argued the "...proposed diversion of fresh water is unjustifiable and unwarranted based on the potential impact to ground water supplies and the potential adverse impact to the Red Deer River system."³⁶ He further argued the Director neglected to consider the impacts to ecosystems downstream of the project, including fish habitat.

[40] Mr. Gallie submitted some of the conditions in the Certificate and Proposed Licence are not technically sound or justifiable. He argued the Director used an outdated document to establish current instream flow requirements, and therefore, the conditions are unjustifiable and supports the recommendation to reverse the granting of the Certificate.

[41] Mr. Gallie stated the report prepared for the Certificate Holder for its application does not contain data to support the claim the source water is surface water. He explained the area of the source well is in an area of ground water recharge whereby the higher elevations of the aquifer supply recharge to the river system during low river levels. He submitted the source well is a ground water well by definition of the *Water Act*,³⁷ and therefore the Director should have followed the *Ground Water Allocation Policy for Oilfield Injection Purposes* (the "Ground Water Policy").

³⁴ City of Red Deer's submission, dated February 13, 2004, at paragraph 59.

³⁵ City of Red Deer's submission, dated February 13, 2004, at paragraph 61.

³⁶ Mr. Mike Gallie's submission, dated February 12, 2004 at page 1.

³⁷ In particular, Mr. Gallie referred to the following definitions from the *Water Act*: "Section 1(1) ... (lll) 'water well' means an opening in the ground, whether drilled or altered from its natural state, that is used for the production of ground water for any purpose, ... [and] (w) 'ground water' means all water under the surface of the ground whether in liquid or solid state...."

[42] Mr. Gallie argued the Director did not require the Certificate Holder to investigate alternative sources, and the Certificate Holder did not provide any evidence to support the claim that alternatives were not economically viable. He submitted that economics based on the amount determined as recoverable oil reserves supports the request to explore alternative sources, including the use of deeper saline water, produced water from other oil pools in the area, or hydrocarbon miscible flooding.

[43] Mr. Gallie stated the conditions in the Certificate and Proposed Licence do not ensure the future needs of the ecosystems that rely on the fresh water from the Red Deer River system are protected. He argued the Director failed to take into account the "...much needed conservation of existing water reserves and potential future needs of the basin's ecosystem including current adverse impacts to Fish habitat."

E. Certificate Holder

[44] The Certificate Holder explained it is the operator of the Tindastoll Belly River Oil Pool and the "...current pressures in the pool do not allow for efficient and effective production of the oil."³⁸ It stated that the *Oil and Gas Conservation Act*, R.S.A. 2000, c. O-6, requires it to conserve and economically maximize oil recovery. It stated it had considered alternatives, but the use of surface water from the Red Deer River was the optimal process from a technical and economic standpoint. The Certificate Holder stated the maximum fluid requirement for the oilfield injection project is 900 m³/day and it will take two to three years to attain the peak requirement, after which the requirement will decline due to recycling of the produced water. Therefore, according to the Certificate Holder, it is highly unlikely it will use its full allocation of water throughout the term of the project.

[45] The Certificate Holder argued the proposed peak diversion will not have a measurable impact on the Red Deer River as 900 m³/day represents less than one tenth of one percent of the minimum Red Deer River flow. It stated the water table disturbance resulting when the Well is pumped at 900 m³/day is limited to soils around the Well and between the Well and the Red Deer River. It stated the source of the water is the Red Deer River and not ground water, and nearby drinking wells are isolated from the effects of the Well. Therefore, according

³⁸ Certificate Holder's submission, dated February 13, 2004, at paragraph 2.

to the Certificate Holder, the proposed project should not impact any existing wells, dugouts, or other water users in the area.

[46] The Certificate Holder submitted that if the oilfield injection project is successful, the "...forecasted oil production will generate significant royalties over the life of the project, which will benefit Albertans generally."³⁹

[47] The Certificate Holder submitted the purposes of the *Water Act* clearly indicate need balance environmental protection and preservation of aquatic ecosystems with economic growth and prosperity. It submitted *Water for Life* emphasizes the balancing of environmental protection with sustainable economic development.

[48] The Certificate Holder submitted that, other than identifying the purpose as industrial and considering the approved water management plan for the region, the purpose for which the water will be used should not be a significant consideration for the Director. It stated that it was not aware of any government policies restricting the use of water for oilfield injection, and therefore "...it is not a proper consideration for the Director to refuse to grant an allocation of water simply because it is for oilfield injection, particularly when this would be at odds with the legislative requirements administered by the Alberta Energy and Utilities Board..."⁴⁰ It argues that the *Oil and Gas Conservation Act* encourages the "...economic, orderly, and efficient development in the public interest of oil and gas resources and to prevent the waste of oil and gas resources in Alberta."⁴¹

[49] The Certificate Holder argued the considerations for the Director in deciding whether to grant a preliminary certificate do not include a balancing of the economic benefits and environmental impacts of the project. However, the Certificate Holder stated the environmental impacts of the project will be very small and the economic benefits, in the form of royalties, are significant.

[50] The Certificate Holder submitted the only policy relating to the allocation of water that requires the proponent to consider alternatives to the use of water is the Ground Water Evaluation Guideline (the "Guideline"), and it is not applicable to this case because it only

³⁹ Certificate Holder's submission, dated February 13, 2004, at paragraph 2.

⁴⁰ Certificate Holder's submission, dated February 13, 2004, at paragraph 14.

⁴¹ Certificate Holder's submission, dated February 13, 2004, at paragraph 14.

applies to potable ground water, not surface water. It stated the Guideline is used "...only where there is no hydraulic connection between the sand and gravel deposits and the water body and where effects on local ground water users may be significant. Neither of these factors is present."⁴²

[51] The Certificate Holder stated the "...amount of water being removed from the hydrologic cycle is relatively small and should not have any significant environmental effects."⁴³ It explained the injected water could be pumped from the reservoir for use on another oil and gas reservoir in the area or treated for other beneficial uses, and therefore would not be lost from the hydrologic cycle or productive use.

[52] The Certificate Holder submitted the amount to be withdrawn is unlikely to negatively impact other water users, recreational users, fish and wildlife, and the aquatic environment, and using a shallow well in the sand and gravel at the side of the Red Deer River, will cause little impact on fish and wildlife and the aquatic environment.

[53] The Certificate Holder argued the Proposed Licence "...specifically reserves the right to adjust the approved allocation in accordance with the recommendations resulting from the Instream Objectives Study on the Red Deer River, which should address any concerns regarding instream flow needs...."⁴⁴ It explained it cannot take any water if the stream flows fall below 4.25 m³/second. It stated flow levels can be predicted and controlled by the Dickson Dam.

[54] The Certificate Holder pointed out that should its water usage drop over time, the Director can reduce the allocation and reallocate it to others. It stated this may occur after five to six years when water requirements are projected to decrease due to the production of water. According to the Certificate Holder, the Director has the power to order it to reduce or stop its diversion if necessary to protect the aquatic environment, and the Director could require it to provide water conservation objectives on 12 months written notice.

[55] The Certificate Holder argued the monitoring conditions are adequate and could not be significantly higher. It stated it is required to measure the quantity of water pumped as

⁴² Certificate Holder's submission, dated February 13, 2004, at paragraph 18.

⁴³ Certificate Holder's submission, dated February 13, 2004, at paragraph 20.

⁴⁴ Certificate Holder's submission, dated February 13, 2004, at paragraph 23.

well as monitoring water levels at the diversion site and observation well daily and monitoring the Conn's well weekly. It explained it is required to report this information to the Director annually.

[56] With respect to the minimum flow rates, the Certificate Holder stated the rates are set at a relatively high level to begin with and can be raised by the Director.

[57] The Certificate Holder stated the term of the Proposed Licence, one year followed by renewals of five years thereafter, is appropriate and will allow it to plan for its project horizons. It submitted that sections 59 and 60 of the *Water Act* provide the grounds on which the Director can refuse to renew a licence.

[58] According to the Certificate Holder, the project is to last 10 to 15 years, and water requirements will be dictated by the technical requirements of the project. It stated the volume allocated is the amount forecasted to be required for the project to be economic. The Certificate Holder argued that, "...given the very small percentage of the flow that it will be using, it would take a significant amount of growth of municipalities serviced by the Red Deer River before it became an issue."⁴⁵ It suggested that is unlikely since the timeframe of the project is 10 to 15 years and other existing licences will expire during that timeframe, and the Director could exercise his discretion under the terms of the Proposed Licence or on renewal to mitigate any adverse effects on other water users.

[59] The Certificate Holder stated it is "...not opposed to having its water consumption modified or reduced in a staged manner providing that it is done in consultation with its project water requirements."⁴⁶

[60] The Certificate Holder submitted there would not be any measurable effect on the bedrock wells or dugouts of any neighbours, including the Landowners, and there is not expected to be a discernible effect on river volumes. It argued the testing completed was adequate to predict the long-term impacts on the immediate neighbours. The Certificate Holder explained the testing was completed during a period of low flow in the Red Deer River, and the water table conditions stabilized when the well was pumped at a rate of 900 m³/day. It stated the existing

⁴⁵ Certificate Holder's submission, dated February 13, 2004, at paragraph 34.

⁴⁶ Certificate Holder's submission, dated February 13, 2004, at paragraph 35.

water users are well beyond the area of the water table disturbance caused by the pumping, and therefore they should not be impacted by future pumping of the well.

[61] The Certificate Holder stated it is required to monitor the effects of the Well daily, it will take steps to remedy any problems it discovers, and if it fails to effectively remedy the situation, the Director can reduce or stop its water diversion. It also stated there is a complaints investigation process provided for in the Proposed Licence should the neighbours believe the project is having an adverse effect.

[62] The Certificate Holder stated the Director had taken into account all the applicable policies. The Certificate Holder stated it is not aware of the indicators used by the Director to determine the appropriate allocations in the Red Deer River and South Saskatchewan River basins. It did note that "...the volume of surface water use in Alberta has declined from a high of over 70 million m³ in 1974 to 26.9 million m³ in 2001," and "...the volumes allocated for injection in the South Saskatchewan River Basin are either steady or on the decline."⁴⁷

F. Director

[63] The Director stated the Certificate and the Proposed Licence should be upheld since the "...allocation will not cause a discernible impact on the river, the hydrologic cycle, the immediate neighbours or existing downstream users."⁴⁸ He further stated the terms and conditions of the Proposed Licence ensures the diversion is conducted in accordance with prescribed rules, and various adaptive and protective measures are included.

[64] The Director argued the majority of the appeals did not address the effect of this allocation, but instead they are attempting to obtain a policy change in the use of water for a specific purpose, and the Board is not the proper forum for such an effort.⁴⁹ He argued the Appellants were seeking changes in policies that would prohibit the use of water for oilfield injection, reserve the water for municipal purposes, and use the water for instream needs and water conservation objectives. The Director submitted the changes being sought should be addressed through existing legislation and current policy initiatives.

⁴⁷ Certificate Holder's submission, dated February 13, 2004, at paragraph 43.

⁴⁸ Director's submission, dated February 13, 2004, at paragraph 1.

⁴⁹ Director's submission, dated February 13, 2004, at paragraph 1.

[65] The Director stated the *Water Act* does not rank the purposes for which water is used, and he is required to assess the various statutory factors and the impact of an allocation but not assess the application based on purpose. He explained he cannot refuse an application based on any specific purpose alone. The Director stated there is no current government policy precluding the use of surface water for oilfield injection purposes.

[66] The Director referred to the formal multi-stakeholder consultation and review process the Minister set up to assess the issue of oilfield injection (the Advisory Committee). He submitted the review process is the proper forum for the public to present their concerns regarding oilfield injection and is the appropriate means by which the government will consider a policy change. He emphasized it is the Minister, and not the Director, who makes the decision as to the next steps, including whether there will be a new policy or not, or whether there will be legislative changes or not.

[67] The Director submitted that section 35(1) of the *Water Act*⁵⁰ provides another tool for the municipalities to access, in that the Minister may order reserve unallocated water in order to determine how the water should be used. The Director stated that it is through the Minister, by provisions in the *Water Act* or the Advisory Committee, that the municipalities should seek changes that would see reservation of water in the Red Deer River for future municipal purposes. The Director stated he does not have the statutory authority to do a blanket reservation in the Red Deer River to reserve water for future municipal use.

[68] The Director stated that it appears the municipalities are seeking to have the purpose of municipal use rank above that of industrial use. He stated the Legislature of Alberta would have to make the amendment to the *Water Act* to accomplish the change, and appealing before this Board is not the proper forum. The Director explained he does not have the authority to change the provisions in the *Water Act* nor to rank the purposes of an allocation in consideration of a licence application.⁵¹

⁵⁰ Section 35(1) of the *Water Act* provides:

“The Minister may by order reserve water that is not currently allocated under a licence or registration or specified in a preliminary certificate:

(a) in order to determine how the water should be used, or
(b) for any other purpose.”

⁵¹ Director’s submission, dated February 13, 2004, at paragraphs 32 to 34.

[69] The Director submitted the "...concerns raised by the municipalities are not related to this actual diversion but are all about seeking policy change." To support this position, the Director stated the Towns of Penhold, Lacombe, and Ponoka receive their water from ground water sources, not the Red Deer River. In addition, the Director explained the communities served by the Water Services Commission currently have a water licence with a 1975 priority and a 2001 application. The communities represented by the North Water Group (whose interests were presented at the Hearing by the City of Red Deer, the Water Services Commission and several Intervenors), including Lacombe and Ponoka, have a 2001 application in before the Director. The City of Red Deer has a licence allocation totaling almost 21 million m³, and this allotment is estimated to meet Red Deer's needs until 2034. In addition, the City of Red Deer has a 2001 application before the Director that will allow enough water to be withdrawn that will meet the needs of the combined communities for 50 years.⁵²

[70] The Director stated he was aware the issue of water conservation objectives would be a significant goal in Phase 2 of the SSRBWMP, and should Cabinet approve Phase 2 of the management plan, then the Director will have to consider it. The Director explained that was the reason he included condition 7 into the Proposed Licence, so he would be able to amend the Proposed Licence to include a water conservation objective. He submitted that "...while the policy change concerns raised by some of the Appellants are genuine, the proper forum for change is through the Minister or the government's various current policy reviews which deal with the exact concerns raised."⁵³

[71] The Director submitted this allocation of water would have no discernible impact on the Red Deer River, the hydrologic cycle, meeting the terms of the Apportionment Agreement, the immediate neighbours, and existing downstream water users. He stated the water allocated amounts to 0.08 percent of the minimum monthly flow volume, 0.08 percent of the minimum monthly average flow rate, and, conservatively, 0.026 percent of the average annual flow volume.⁵⁴ The Director explained the allocation could theoretically cause a 0.3

⁵² Director's submission, dated February 13, 2004, at paragraph 38.

⁵³ Director's submission, dated February 13, 2004, at paragraph 48.

⁵⁴ Director's submission, dated February 13, 2004, at paragraph 52.

millimetre drop in the level of the Red Deer River during low flow periods, and therefore, any effect would be of such a small magnitude so as to be undetectable.⁵⁵

[72] The Director explained he included specific terms and conditions in the Proposed Licence to provide further protection to existing users and the Red Deer River. He explained the terms and conditions set out in the rules of diversion, including location, rate, amount, and restricted flow, will ensure the diversion is conducted in the same way in which it was applied for and authorized by the Director. He stated other terms and conditions allow for the right to amend the Proposed Licence if applicable, providing built in checks and balances throughout the term of the Proposed Licence. According to the Director, additional terms and conditions address potential or actual interference. He stated the monitoring and recording clauses ensure the rules of diversion are recorded and provide information that is invaluable in any investigation of interference. The Director further stated the complaint investigation clause requires the Certificate Holder to respond to various complaints. The Director also referred to the built in priority clause that requires the Certificate Holder to cease diverting water if so instructed by Alberta Environment. The Director submitted, failure "...to follow these rules can result in compliance an enforcement action and possibly even suspension or cancellation of the licence."⁵⁶

[73] The Director stated his current intention is to consider issuing the Proposed Licence for a one-year term, thus allowing for a review of the allocation on expiry of the term of the Proposed Licence. He stated the "...renewal provisions allow the Director and possibly the public to be involved in this licence on a more frequent basis. This will allow a review on the degree of use of the allocation, any new government policy, etc., thus ensuring that the terms of this future licence will be more frequently reviewed."⁵⁷

G. Intervenor

1. Red Deer County Ratepayer Association

[74] The Ratepayer Association explained it is a registered organization of Red Deer County residents that works toward good and fair government at all levels. It stated its purpose

⁵⁵ Director's submission, dated February 13, 2004, at paragraphs 52 to 54.

⁵⁶ Director's submission, dated February 13, 2004, at paragraph 68.

⁵⁷ Director's submission, dated February 13, 2004, at paragraph 77.

is to "...give a united voice to county residents's [*sic*] concerns with those decisions made by government that would work to the detriment of our residents...."⁵⁸

[75] It stated the decision to allow fresh water withdrawal from the Red Deer River and the associated stream beds and aquifers is "...an unnecessary, burdensome waste of Alberta's water supply."⁵⁹ The Ratepayer Association submitted that it understands the *Water Act* does not provide for the removal of water from the water cycle. It argued the removal of water from the water cycle is the same as the sale of fresh water or the transfer of water from one basin to another, neither of which is allowed.

[76] The Ratepayer Association argued the Director did not balance the economic benefits with the environmental impacts. It stated the oilfield in question is old, has a local history of poor productivity throughout, and the Certificate Holder failed to prove the economics to ensure productivity warrants costs to the environment.

[77] The Ratepayer Association submitted the Certificate and Proposed Licence do not provide adequate protection to other water users, fish and wildlife, or the aquatic environment including instream flow needs. It stated some of its members had participated in the Water for Life workshops and meetings and were told repeatedly of the need to maintain flow volumes and keep water quality high for the fish, aquatic environment, and downstream users. The Ratepayer Association stated reduced instream flows would result in lower water quality, and it questioned whether the higher costs of treating lower quality water was added to the real cost of the project. The Ratepayer Association argued the cumulative effect of withdrawing the water should be considered in order to take into account the current low levels of the Red Deer River.

[78] The Ratepayer Association submitted the Director did not consider the impact the project would have on future water users, including current and future needs of the municipalities. It stated many Red Deer County residents are directly and negatively influenced by the project, and the real cost of the application needs to be considered in terms of current and future water sustainability for Albertans.

⁵⁸ Ratepayer Association's submission, dated February 17, 2004.

⁵⁹ Ratepayer Association's submission, dated February 17, 2004.

2. Council of Canadians

[79] The Council of Canadians stated it is "...opposed to any use of fresh water that removes it permanently from the hydrological cycle or irreparably pollutes it."⁶⁰ It submitted the present application cannot be considered in isolation from all other applications, and the cumulative effect of all such withdrawals must be considered. The Council of Canadians stated small fresh water allocations for oilfield injection cannot be trivialized when added together, considering a total of 198.5 billion gallons was allocated for 1999-2002, and in 2003, the projection is 106 billion gallons.⁶¹

[80] The Council of Canadians submitted the "...destruction of an enormous quantity of water..." must be considered with the increasing demands from industry, agriculture, and a growing population, and the effects of the current drought. It argued the "...permanent extraction of any amount of water, no matter how small, from such a stressed system must be prohibited."⁶²

[81] The Council of Canadians stated there is a close connection between surface water and ground water, and withdrawals from surface water sources cannot be considered in isolation from ground water effects. The Council of Canadians submitted the lack of policies regarding the use of surface water for oilfield injection, allocation based on purpose, or reserving water for future users, are serious omissions. It submitted there should be a moratorium on similar applications until after the government develops appropriate guidelines and regulations.

3. Dorene Rew

[82] Ms. Dorene Rew questioned if the use of water for oilfield injection, where the water is removed from the hydrologic cycle, constitutes a sustainable use of this valuable and finite resource. She submitted the in purposes of the *Water Act*, preserving the environment for the future should have equal ranking to present considerations.

[83] Ms. Rew stated there are several, apparently economic alternatives to the use of potable water for enhanced oil recovery. She argued that even though the amount allocated to

⁶⁰ Council of Canadians' submission, dated February 17, 2004.

⁶¹ See: Council of Canadians' submission, dated February 17, 2004.

⁶² Council of Canadians' submission, dated February 17, 2004.

the Certificate Holder is relatively small, the Director has "...sent a signal to all the other oil companies that they really don't have to make any effort to justify using potable water instead of an alternative."⁶³ She stated the Director failed to adequately take into consideration the cumulative effect if other companies make similar requests to that of the Certificate Holder. According to Ms. Rew, the government should employ the precautionary principle until the government has prepared a policy regarding the use of surface water for injection purposes.

4. Trout Unlimited

[84] Trout Unlimited argued the Director did not address fish and wildlife issues or aquatic resources including instream flow needs. It stated the flow in the Red Deer River has steadily decreased over the past few years, and decreasing the flows further by more withdrawals would only increase stresses on the aquatic health of the river. Trout Unlimited explained the lower water flows during the past several summers has resulted in an increase in the temperature of the Red Deer River thus jeopardizing fish populations. It stated: "Decreasing water flows further may or could cause fish kill."⁶⁴

[85] Trout Unlimited stated aquatic vegetation would increase with less water flow, and when the vegetation dies, oxygen levels decrease and cause further stress on the aquatic resources. It also stated decreased water flows would increase the number of pathogens per litre, thereby jeopardizing public health.

5. Normandeau Cultural and Natural History Society

[86] Normandeau stated its interest in the appeals stems from its responsibility for management of the Gaetz Lakes Sanctuary, a federal migratory bird sanctuary, and its responsibility to play a leadership role in the protection of the cultural and natural heritage resources.⁶⁵

[87] The Normandeau stated it is strongly opposed to any use of fresh water that permanently removes or contaminates it, and removing water for oilfield injection is not a

⁶³ Ms. Dorene Rew's submission, dated February 12, 2004.

⁶⁴ Trout Unlimited's submission, dated February 17, 2004.

⁶⁵ See: Normandeau's submission, dated February 18, 2004.

sustainable use. It argued the cumulative effect must be considered. It stated water taken out of the river is no longer available to maintain the basic health of the Red Deer River and the ecosystems and people it supports.

[88] Normandeau expressed concern that lower water levels will have damaging effects on the fish population, which in turn will affect birds that are dependent on fish as a food source. It stated lower flow may mean rapids which presently remain open will freeze, reducing the ability of the river to support duck populations.

[89] Another concern of Normandeau was the potential long term and cumulative effects on ground water that could possibly impact water levels in the Gaetz Lakes.

IV. CLOSING ARGUMENTS

A. Mountain View Regional Water Services Commission

[90] The Water Services Commission emphasized the use of surface water for oilfield injection is not acceptable when there are a number of alternatives available, and the public does not support the use of surface water for enhanced oil recovery. It argued the application was incomplete and the Director did not adequately review the application.

[91] It argued the amount of water applied for is not a very small amount as alluded to by the Director and the Certificate Holder. It stated the Certificate Holder argued incorrectly that no alternatives, such as CO₂, are available. It submitted the Certificate Holder's "...decision on 'non economics' applies to their cash flow and asset situation, not the true viable picture of consideration for CO₂ technology in this situation."⁶⁶

[92] The Water Services Commission submitted the use of surface water for oilfield injection is not an environmentally friendly or wise use of water, and since there is no return of the water to the hydrologic cycle, it is a valid reason to not grant the application. The Water Services Commission argued the Director did not investigate alternatives.

[93] The Water Services Commission submitted the terms and conditions of the Certificate and Proposed Licence do not require adequate monitoring of bacteria in the water,

⁶⁶ Water Services Commission's submission, dated March 5, 2004, at page 4.

and pumping at that level may introduce bacteria to the subsurface. It stated the Director over allocated considering the amount requested by the Certificate Holder. It also stated the Director did not review the municipalities' needs nor ensure their water is secure. It stressed there are alternatives to oil but no alternative for water.

[94] It submitted the Director did not utilize the available studies to determine the future sustainability of the Red Deer River. The Water Services Commission concluded by stating the Certificate should be cancelled and other sources for flooding be investigated.

B. Mr. Gerald Oxtoby, Mr. Terry Little, and Mr. Kelly Smith

[95] The Landowners submitted the Director's decision was neither prudent nor cautious since no AEUB approval had been obtained; the oil in the Tindastoll Belly River formation is not going anywhere; the partial waterflood scheme, if successful may only recover 13 percent of the oil in place; and the preliminary recommendations from the Advisory Committee on water use policy are due in the spring of 2004.⁶⁷

[96] The Landowners stated the legislation expressly acknowledges that conservation of water is a goal and policy that is relevant when the Director considers how to allocate water and in deciding what purpose the water is to be used. If he ignores the purpose, "...his decision may be viewed as being beyond his jurisdiction or *ultra vires*."⁶⁸ The Landowners respectfully submitted the Director's interpretation of the *Water Act* is incorrect, as the purpose of the water use is extremely relevant to the management of water resources, and the decision to issue a preliminary certificate must be exercised pursuant to the purposes of the legislation. They submitted the issuance of the certificate does not promote the conservation of water.

[97] The Landowners stated the purpose of the water use is central to the management of water resources and is supported by: (1) the existence of the Ground Water Policy; (2) the importance of purpose in the *Water (Ministerial) Regulation*, A.R. 205/98 which exempts certain uses; (3) cumulative impacts cannot be considered under sections 51(4) and 66(3) of the *Water Act* without considering purpose of water use; and (4) the government forming the Advisory

⁶⁷ See: Landowner's submission, dated March 4, 2004, at paragraph 7.

⁶⁸ Landowner's submission, dated March 4, 2004, at paragraph 16.

Committee to advise the Minister on policy and practice relating to water uses that remove water from the hydrologic cycle.

[98] The Landowners argued that, under section 51(1)(a) of the *Water Act*, the Director can refuse to issue a preliminary certificate, and the fact that water would be permanently removed from the hydrologic cycle is a valid reason for the Director to refuse the application. They stated that in exercising his discretion under section 66(3), the "...Director may consider any existing, potential or cumulative hydrological effects of the proposed diversion or any other matters the Director may deem to be relevant."⁶⁹

[99] The Landowners stated the Certificate Holder failed to inform the Director that it knew of a source of produced water near the site, and this amount should have been deducted from the 300 m³/day to 750 m³/day, which is allegedly required for the first year of the waterflood.

[100] The Landowners referred to the testimony provided by the Director's witnesses, and it was stated they were less than clear on whether traditional agricultural use allocations from the Red Deer River, such as the allocation of 235,005 gallons of water to Mr. Oxtoby, were included in the calculation of the maximum surface water allocations in the main stem of the Red Deer River. The Landowners expressed concern that Alberta Environment does not collect information on the actual annual use of the main stem of the Red Deer River.

[101] The Landowners stated the Director did not properly take into account the Ground Water Allocation Policy. They argued the Certificate Holder would divert ground water as defined by section 1(1)(v) of the *Water Act*⁷⁰ as the water being withdrawn was water under the surface of the ground. They referred to the cross-examination of the Certificate Holder when it was stated the "...cone of depression has the potential to draw ground water from the Paskapoo Formation."⁷¹ They also argued that, considering the ground water flow is from the uplands towards the Red Deer River, as the flow in the Red Deer River decreases, the ground water flowing into the river will increase, and since the proposed well is in the path of this ground water, the amount of ground water diverted will also increase. Therefore, according to the

⁶⁹ Landowner's submission, dated March 4, 2004, at paragraph 41.

⁷⁰ Section 1(1)(v) of the *Water Act* defines ground water as "...all water under the surface of the ground whether in liquid or solid state ..."

⁷¹ Landowner's submission, dated March 4, 2004, at paragraph 62.

Landowners, the Ground Water Policy applies, as the Certificate Holder intends to use potable ground water for oilfield injection, and the Director was wrong when he concluded the allocation was for surface water.

[102] The Landowners argued the Certificate Holder should have followed the requirements of the Ground Water Policy, specifically to investigate alternate sources to using non-saline water and to demonstrate that no viable sources are available prior to submitting an application.

[103] The Landowners suggested the Certificate and Proposed Licence might constitute a transfer of water between river basins, particularly since the water is being transferred into a "...geologic formation or basin 4000 feet below the surface of the earth, which does not contribute any water to the South Saskatchewan River Basin."⁷² They further stated:

"If it requires a special Act of the Legislature to transfer water from one river basin to another, you would think that the Director would take a dim view of an application to transfer potable water to a basin 4,000 feet below the surface of the earth, where for all intents and purposes, it will never be seen again."⁷³

[104] The Landowners submitted the allocation of water within the South Saskatchewan River Basin should be "...approached with great caution and care, with all possible alternatives being fully explored prior to further diminishing the flow of the Red Deer River as a result of the proposed Capstone project."⁷⁴

[105] In their rebuttal submission, the Landowners stated that, should the Board not recommend to reverse the Certificate, they are "...asking the Board to recommend to the Minister that the amount of water allocated in the Certificate be reduced on the basis that alternate sources of non-potable produced water are available in the area and that 900 m³/day is not required for the one-year term of the Preliminary Certificate."⁷⁵

[106] The Landowners stated the Certificate Holder and the Director did not refute the Landowners' argument that water to be withdrawn from the Well is potable. They also stressed that water withdrawn from the Well will be draining some potable ground water from the

⁷² Landowner's submission, dated March 4, 2004, at paragraph 84.

⁷³ Landowner's submission, dated March 4, 2004, at paragraph 85.

⁷⁴ Landowner's submission, dated March 4, 2004, at paragraph 87.

⁷⁵ Landowner's submission, dated March 25, 2004, at paragraph 3.

Paskapoo Formation, and it will be withdrawing ground water, as defined in the *Water Act*, that could be consumed by livestock at the location of the well.

[107] The Landowners referred to the Director's statement that the legislation permits the Director to cancel preliminary certificates or licences if the rights granted have not been exercised. The Landowners argued the Director is not canceling these rights, given the information provided in the Water Use for Injection Purposes in Alberta report indicates 169 million m³ has been allocated for injection purposes from ground and surface water sources and only 47.5 million m³ was diverted.⁷⁶

C. City of Red Deer

[108] The City of Red Deer stated the Director did not consider whether the water to be diverted constitutes surface or ground water, and therefore he failed to apply the applicable statutory provisions. It argued the Director failed to consider the applicable provisions of the *Water Act*, specifically section 2. It stated the Director failed "...to consider the role of the [A]EUB and whether an [A]EUB application should be held as a preliminary to the application to Environment."⁷⁷

[109] The City of Red Deer submitted the Director has trivialized this application, and referred to the testimony of one of the Director's witnesses who stated the "...water is not lost from the hydrological cycle because in a million years, or perhaps a hundred thousand years, molecules of water will seep back into the system."⁷⁸

[110] The City of Red Deer expressed concerns the Director issued a Certificate for 900 m³/day, an amount in excess of what is needed by the Certificate Holder. It argued the Director is in a state of denial as it was only in cross-examination that it was acknowledged that the removal of the water would have an affect on the Red Deer River.

[111] The City of Red Deer argued the Certificate Holder filed an inadequate application since it was not clear as to the amount of water needed; it failed to study, in depth,

⁷⁶ See: Landowner's submission, dated March 25, 2004, at paragraphs 13 and 14.

⁷⁷ City of Red Deer's submission, received March 5, 2004, at paragraph 6.

⁷⁸ City of Red Deer's submission, received March 5, 2004, at paragraph 9.

alternatives; it suggests the water to be used is surface water when it is a mix of surface and ground water; and it can afford alternate methods of recovery.

[112] The City of Red Deer argued that by suggesting the amount of water taken is small, the point is being missed with respect to the cumulative taking of water for oilfield flooding and the cumulative taking of water out of the hydrologic cycle. It stated it also avoids the issue of stresses on water systems throughout Southern Alberta, and the stresses that will increase as Central Alberta grows and communities and businesses require more water.⁷⁹

D. Mr. Mike Gallie

[113] Mr. Gallie submitted the Director failed to properly determine the source was ground water, and therefore, he failed to incorporate the Ground Water Policy. He also stated the report provided by the Certificate Holder "...proves the upland region to the north slopes southward to the River which provides further evidence that ground water flow regime is to the river."⁸⁰ He argued the Certificate Holder did not research the alternative of using produced water from other fields.

E. Certificate Holder

[114] The Certificate Holder argued many of the Parties and the Intervenors tried to convert the Hearing into a wide-ranging reconsideration of the policy of the Government of Alberta, in particular a change in the policy to prevent the use of fresh water for oilfield injection. It stated the Mayor of Red Deer and the Water Services Commission admitted they refused to meet with the Certificate Holder to resolve their concerns because they want the use of fresh water for oilfield injection to cease. It submitted that while "...fresh water use is certainly a valid public policy debate, it should take place within the appropriate mechanisms for policy change. It cannot and should not be dealt with in the context of a single application for a relatively small amount of water by a single company."⁸¹

⁷⁹ City of Red Deer's submission, received March 5, 2004, at paragraph 17.

⁸⁰ Mr. Gallie's submission, received March 5, 2004, at page 3.

⁸¹ Certificate Holder's submission, dated March 16, 2004, at paragraph 8.

[115] The Certificate Holder argued the Appellants are seeking a policy change that conflicts with this mandate. It stated the government has processes in place for consultations and recommendations on policy considerations, and if the Parties want to change the legislation and policy, they should make their submissions to the government. They submitted the Board is neither equipped nor authorized to resolve such wide-ranging issues since its mandate is to deal with specific situations.

[116] The Certificate Holder stated the oil and gas industry is participating in the Advisory Committee, which is currently considering the use of water by industry. It submitted the Water for Life strategy does not restrict the continuation of current uses, including oilfield injection. It stated the existing legislation and policies in relation to water allocation must be applied, and it has complied with all requirements.

[117] The Certificate Holder argued it has taken the same approach as the municipalities. It stated the municipalities currently have applications before Alberta Environment to satisfy their needs for 30 to 50 years into the future, and even though they do not require the water at the present, they are reserving the water now.

[118] It argued the attempts to have the amount allocated reduced to 300 m³/day for the first year is an attempt to restrict the Proposed Licence to one year and force it to make further applications for any greater amount it may need. It stated yearly applications would be a huge procedural burden, for it and Alberta Environment, which would have to process the applications for relatively small amounts of water. It further stated the conditions included in the Proposed Licence places limitations on the Certificate Holder and permits the Director to maintain effective supervision over time while allowing needed flexibility to the Certificate Holder. It referred to the Water Services Commission's intention to oppose all applications of this type, indicating any future applications by the Certificate Holder on a year-by-year basis would be subject to opposition.

[119] The Certificate Holder responded to the suggestions there were supplies of produced or saline water available to replace the fresh water it intends to use, stating that the Director could reduce the amount of water allocated if there is a secure, continuous supply of produced water that is economically available. It stated it would endeavour to use trucked-in

produced water wherever possible and economical, realizing weather conditions and road restrictions may impose restraints on truck traffic, and the source must be reliable year-round.

[120] The Certificate Holder referred to the Ground Water Evaluation Guideline (the “Guideline”) that states, all “... projects in sand & gravel deposits adjacent to a water body (river, stream, lake, etc.) will be evaluated according to procedures for licencing and approval of surface water works and diversions.”⁸² The Certificate Holder argued there was no evidence to contradict that there was a strong hydraulic connection between the sand and gravel deposits and the Red Deer River, and the use of the water is unlikely to have any impact on local ground water users, therefore excluding the water to be used by the Certificate Holder is excluded from the Guideline.

[121] The Certificate Holder admitted there might be small amounts of ground water that would be withdrawn from the well, but the overwhelming majority would be water from the Red Deer River. It stated the Guideline makes it clear the percentage of ground water is irrelevant providing the hydraulic connection and no significant effects on local ground water users is demonstrated.

[122] The Certificate Holder stated the only effect that will occur as a result of its project is that 900 m³/day less volume of water will flow downstream in the Red Deer River. It stated the Director gave evidence the Red Deer River is far from being fully allocated and the province has always been able to provide more than the minimum flows to Saskatchewan, even in the past few dry years. It stated the withdrawal would lower the river by a negligible amount, “...the width of a pencil line.”⁸³ It further stated the City of Red Deer did not return over two million m³ of water to the Red Deer River in 2002, six times as much water as would be removed from the river by this project annually.

[123] The Certificate Holder outlined the various provisions in the Certificate and Proposed Licence that would allow the Director to curtail or end the use of the water. It stated Alberta Environment has the necessary knowledge and expertise to manage water use from the Red Deer River, and it should be allowed to carry out its mandate.

⁸² Certificate Holder’s submission, dated March 16, 2004, at paragraph 22.

⁸³ Certificate Holder’s submission, dated March 16, 2004, at paragraph 31.

[124] The Certificate Holder argued it is unfair to defer the matter indefinitely pending possible policy changes, and as it applied under the present regime, the appeals should be considered under the same regime. It submitted, there “...is no reasonable expectation that the government will make draconian and immediate changes to its current policy of permitting the use of fresh water for oilfield injection.”⁸⁴

[125] The Certificate Holder submitted the Appellants relied on generalized fears and perceptions, and none of them put forward scientific or empirical evidence that the allocation of water would cause any real problems. It stated the Appellants had the onus to provide sufficient justification to reverse the Director’s decision.

[126] The Certificate Holder submitted that the evidence provided by Dr. David Schindler, was not based on any scientific review of the Red Deer River Basin, and therefore his testimony should be accorded little weight, if any.

[127] The Certificate Holder explained it was told by the AEUB staff that its application would not be considered and certainly not processed until it had the water allocation from Alberta Environment. It stated there was no requirement for the Director to investigate the AEUB’s policy.

[128] It responded to suggestions that with its revenues from the enhanced production scheme it could readily afford alternate methods of recovery, stating the calculations were “...based on simple arithmetic founded on very limited cross-examination and incomplete facts.”⁸⁵ It stated the only economically and technically feasible method was the use of surface water. It explained other methods may not be reliable or economical, would contaminate the oil with H₂S, or would not provide sufficient water. It also explained the use of CO₂ for injection is still quite experimental and relies heavily on being located very close to an adequate supply point. It stated the use of CO₂ is a tertiary form of recovery and is used after waterflood has been used for secondary recovery. According to the Certificate Holder, this method still requires water, and since CO₂ is highly corrosive, it has cost and safety concerns that make it a significantly inferior option.⁸⁶

⁸⁴ Certificate Holder’s submission, dated March 16, 2004, at paragraph 37.

⁸⁵ Certificate Holder’s submission, dated March 16, 2004, at paragraph 41.

⁸⁶ See: Certificate Holder’s submission, dated March 16, 2004, at paragraph 42.

[129] The Certificate Holder stated there was absolutely no evidence to support Mr. Gallie's theory that the removal of ground water will create a hydraulic connection to the upland aquifer. It also stated the methods used by other companies are not in evidence.

[130] The Certificate Holder stated the affidavits of the Mayors of Penhold, Innisfail, Bowden, Olds, Didsbury, Carstairs, and Crossfield do not form part of the evidence and should not be relied upon as these individuals did not attend the Hearing.

[131] The Certificate Holder stated the purpose of the *Water Act* requires not only conservation but also management and wise use of water recognizing the need for economic growth and prosperity, and therefore the allocation and use of water for oilfield injection is consistent with the purposes section.

[132] The Certificate Holder argued the "...type of use of water is a valid consideration only in limited cases."⁸⁷ It presented irrigation purposes as an example. It submitted: "Statutory interpretation principles would suggest that since a consideration of that use (irrigation) has been specified in the Act, while other uses are not, then it was not the intention of the Legislature that those other uses be specifically considered by the Director in making his decision."⁸⁸

[133] The Certificate Holder emphasized that the oil produced by injection will generate royalties and benefits to Albertans, the amount of water to be withdrawn would not pose a threat to the Red Deer River flows or neighbouring ground water users, and the Director has broad discretion to reduce or remove the use of water. It argued this is an appropriate balance for the public good.

F. Director

[134] The Director stated that under section 66(3)(a) of the *Water Act*, he must consider any applicable approved water management plan, but Phase 1 of the SSRBWMP does not contain any provisions applicable to this application. He stated he was aware of Phase 2 of the SSRBWMP and included a provision in the Proposed Licence allowing for a water conservation objective to be imposed.

⁸⁷ Certificate Holder's submission, dated March 16, 2004, at paragraph 47.

⁸⁸ Certificate Holder's submission, dated March 16, 2004, at paragraphs 47 and 48.

[135] The Director submitted that no scientific evidence was provided that showed the Certificate Holder's water allocation would affect other users' allocation of water.

[136] The Director stated he considered the Ground Water Policy and was aware there was no Ministerial Order under section 34 of the *Water Act* prohibiting the consideration of an application for the use of water for oilfield injection or enhanced oil recovery. The Director emphasized that only the Minister "...has the power to direct that an application for a particular purpose is not to be received under the *Water Act*."⁸⁹ The Director indicated the Minister has established the Advisory Committee to provide recommendations regarding uses that remove water from the active water cycle. He stated opportunities existed for public input to the Advisory Committee.

[137] The Director stated he reviewed and considered the information provided in the application regarding alternatives and the economics of alternatives. As to the issue of whether the Director adequately considered the removal of water from the hydrologic cycle, the Director stated he relied upon the advice of the Water Assessment Branch of Alberta Environment. He stated the advice he received was that there would be no impact on the hydrologic cycle, and even though the water was removed from the active water cycle, there would be no impact on the amount of water that would be available as precipitation nor on the amount of evaporation in either the Red Deer River Basin or within the province. According to the Director, the only impact would be the removal of the water from the flow of the Red Deer River, and therefore, it would not be available for allocation to future water users.

[138] The Director submitted that he could not reject the application on a summary basis, and therefore, he conducted a technical review of the application, determined all of the legislated requirements were met, and determined there was no basis on which to refuse to issue the Certificate.

[139] The Director explained the one-year term of the Proposed Licence with five-year renewals would allow for the incorporation of any policy directives that might be put in place. The Director stated the term of the Proposed Licence has not yet been set.⁹⁰ He submitted that no evidence was provided to suggest the terms and conditions of the Certificate and Proposed

⁸⁹ Director's submission, dated March 15, 2004, at paragraph 26.

⁹⁰ See: Director's submission, dated March 15, 2004, at paragraph 42.

Licence are inadequate or that the terms of the Proposed Licence or the renewal mechanisms were inappropriate.

[140] The Director explained the initial application from the Certificate Holder was for 1,000 m³/day, but he requested the Certificate Holder to review its allocation request and it determined its maximum diversion rate would be 900 m³/day. The Director explained that:

“...when an application is received, that the Applicant must request the maximum amount of water that is required for a project so that the Director can determine what the impact of the project will be upon the source of supply. The Director does not approve of applicants who request smaller quantities of water, and thereby cause the Director to review their requirements based on smaller quantities and then receive subsequent applications for larger quantities of water.”⁹¹

[141] The Director stated he allocates the maximum amount of water required by a project in order to deal with the current application and future cumulative effects, thereby providing the most conservation estimate, being the maximum allocation of water. He submitted this is a reasonable way to proceed as it allows him to consider the cumulative effects of a proposed activity, and it “...reduces the bureaucracy that is involved in water management and avoiding a proliferation of applications as projected water use for a specified activity increases over the life a project.”⁹²

[142] The Director argued the only evidence received regarding the source of the water was provided by the Certificate Holder and the Director, indicating the source of supply was surface water from the Red Deer River taken through an infiltration well and it was not ground water. The Director stated the immediate neighbours either did not obtain their source of supply from the Red Deer River but through ground water wells and surface water runoff, or were sufficiently removed from the Certificate Holder’s point of diversion to be outside the zone of influence.

[143] The Director reiterated the source of water supply was the Red Deer River, and therefore, the policy for ground water allocation did not apply. The Director explained he used the policy for guidance, particularly when considering the term of the Proposed Licence and any renewal. He referred to the testimony of the Certificate Holder’s hydrogeologist when it was

⁹¹ Director’s submission, dated March 15, 2004, at paragraph 48.

⁹² Director’s submission, dated March 15, 2004, at paragraph 51.

explained that he would not use ground water for oilfield injection as the possibility of harm to adjacent landowners would be too great for him to make that recommendation.

[144] The Director stated he reviewed the application regarding alternative sources of supply and found there was sufficient detail for general costs, and the costs provided were consistent with what the Director would have expected.

[145] The Director submitted the Appellants did not provide any evidence the Director did not properly implement the policies that are presently in effect or that he did not provide adequate terms and conditions in the Certificate and Proposed Licence to address future policies that may be implemented.

[146] The Director stated that section 35 of the *Water Act* permits the Minister to reserve water for a specified purpose, but no such reservation exists for future industrial or municipal growth for the Red Deer River Basin except as provided in the *South Saskatchewan Basin Water Allocation Regulation*, A.R. 307/91.

[147] The Director stated the Water Services Commission was incorrect when it claimed the Director had verified there would be detrimental effects on the Red Deer River, and what he had testified was that there would not be a discernable effect on the Red Deer River.

[148] The Director submitted the purposes of the *Water Act*, as listed in section 2, are not ranked in order, and the Director must balance the competing purposes in view of the primary function of the *Water Act* as a water allocation statute.

[149] The Director explained the *Water Act* does not contain any provision that dictates the order in which various regulatory approvals must be obtained, and sections 71(1)(e) and 55(1)(e) of the *Water Act* allows the Director to cancel a preliminary certificate or a licence if the rights granted have not been exercised.

[150] The Director reiterated that the source of the water is river water. The Director referenced Phase 2 of the SSRBWMP in which it identifies that in "...Alberta, ground water that is hydraulically connected to a surface water body is licenced as surface water."⁹³

[151] The Director submitted the evidence of Dr. Schindler did not relate to the Certificate Holder's application, and Dr. Schindler admitted he had not read the application nor

had he conducted any scientific studies in the Red Deer River basin. He stated, “Dr. Schindler provided anecdotal evidence related to his belief that declining flows in the Red Deer River Basin and elsewhere in Alberta are associated with climate change.”⁹⁴ The Director stated his witness clearly indicated the flows in the river basins do not demonstrate any decline when they are adjusted for anthropogenic activities, and the flows in the Red Deer River are within normal range of historical variability.

[152] The Director submitted that, should the Board determine the water source is not surface water, there would be no consequences that would result from that characterization. He stated the application did include an assessment of other alternatives, and he intended to follow the time sequence and renewal process required by the Ground Water Policy.

V. DISCUSSION AND ANALYSIS

[153] Based on the Notices of Appeal filed with the Board and further to the decision of the Board following the Preliminary Meeting, the main issues that Board asked the parties to address were: (1) Purpose,⁹⁵ (2) Protection,⁹⁶ (3) Volume⁹⁷, (4) Immediate Neighbours,⁹⁸ and (5)

⁹³ Director’s submission, dated March 15, 2004, at paragraph 94.

⁹⁴ Director’s submission, dated March 15, 2004, at paragraph 101.

⁹⁵ (a) What role does purpose for which the water will be used have with respect to the allocation of water under the *Water Act*? (b) Is the use of water for oilfield injection a valid reason to refuse to grant an allocation of water under the *Water Act*? (c) Has the Director adequately balanced the economic benefits and environmental impacts of this project? (d) Has the Director adequately considered alternatives to the use of water for this project, including the economics of those alternatives? (e) Has the Director adequately considered the removal of the allocated water from the hydrological cycle?

⁹⁶ (a) Does the Preliminary Certificate and Proposed Licence provide adequate protection for: (1) other water users, (2) recreational users, (3) fish and wildlife, and (4) the aquatic environment, including instream flow needs? (b) Are the terms and conditions of the Preliminary Certificate and Proposed Licence adequate with respect to: (1) monitoring, (2) reporting, (3) minimum flow rates, and (4) maximum pump rates? (c) Is the term of the Proposed Licence appropriate? (d) Are the renewal mechanisms relating to the Proposed Licence appropriate?

⁹⁷ (a) Is the volume of water allocated appropriate, including taking into account the proposed length of the project and the availability of water in the Red Deer River? (b) Has the Director adequately considered the impact of this allocation on future water users, including the future needs of municipalities? (c) Should the volumes of water be allocated in some staged manner?

⁹⁸ (a) Has the Director adequately considered the potential impacts of the project on the immediate neighbours to the project, being Mr. Oxtoby, Mr. Little, and Mr. Smith? (b) Was the testing undertaken sufficient and adequate to predict the long-term impacts of the project on the immediate neighbours? (c) Do the immediate neighbours to the project have adequate protection in the event that there is an impact on them?

Policy Considerations.⁹⁹ The Board will first review the general framework of the *Water Act* to provide a context for its discussion and analysis and then consideration of each of these issues.

A. The *Water Act*

[154] The purposes of the *Water Act* are clearly set out by the Legislature in section 2.¹⁰⁰ These purposes are to support and promote the conservation and management of water, including the wise allocation and use of water, while recognizing six factors, ranging from sustaining the environment and high quality of life, to the need for Alberta's economic growth and prosperity. The balancing of these various factors is the crux of these appeals.

[155] The *Water Act* establishes the principle that all water is the property of the Provincial Crown,¹⁰¹ and then establishes a system of granting water rights by way of water licences. These water licences may be issued for any or all of the following purposes: “(a) municipal; (b) agricultural; (c) irrigation; (d) commercial; (e) industrial; (f) water power; (g) dewatering; (h) management of fish; (i) management of wildlife; (j) implementation of a water conservation objective; (k) habitat enhancement; (l) recreation; (m) water management; (n) any other purpose specified by the Director.”¹⁰² Subject to the discussion below, there is no distinction or ranking between these purposes.

⁹⁹ (a) Has the Director properly taken into account all the applicable policies of the Government of Alberta? (b) Do the Preliminary Certificate and Proposed Licence adequately allow for any changes regarding the policy directions on oilfield injection? (c) Has the Director adequately taken into account the sustainability of the Red Deer River Basin and the South Saskatchewan River Basin?

¹⁰⁰ Section 2 of the *Water Act* provides:

“The purpose of this Act is to support and promote the conservation and management of water, including the wise allocation and use of water, while recognizing:

- (a) the need to manage and conserve water resources to sustain our environment and to ensure a healthy environment and high quality of life in the present and the future;
- (b) the need for Alberta’s economic growth and prosperity;
- (c) the need for an integrated approach and comprehensive, flexible administration and management systems based on sound planning, regulatory actions and market forces;
- (d) the shared responsibility of all Alberta citizens for the conservation and wise use of water and their role in providing advice with respect to water management planning and decision-making;
- (e) the importance of working co-operatively with the governments of other jurisdictions with respect to transboundary water management;
- (f) the important role of comprehensive and responsive action in administering this Act.”

¹⁰¹ See: Section 3 of the *Water Act*.

¹⁰² *Water (Ministerial) Regulation*, A.R. 205/98, (the “Regulation”) section 11.

[156] The granting of these water licences is based on the “first in time, first in right” principle, as detailed in sections 28 to 31 of the *Water Act*. Under the first in time, first in right principle, water licences are assigned a “priority” or order of seniority, generally based on the date on which the application for the water licence was received. The earlier the date in time that the licence was issued the higher the priority and the more senior the licence. Conversely, the more recent the date in time the licence was issued the lower the priority and the more junior the licence. The first in time, first in right principle ensures that within a water source (e.g. a reach of a river), licence holders with senior priorities get their allocation of water in preference to licence holders with junior priorities. Ensuring this preference is done through a process known as “water mastering,” which requires licence holders with the junior priorities to cease withdrawals from the water source if it is necessary to make the water available to the licence holders with the senior priorities.¹⁰³

[157] The *Water Act* establishes two main exceptions to this priority scheme: household users and traditional agricultural users. The household user¹⁰⁴ classification replaces the common law riparian right with respect to the diversion of water,¹⁰⁵ and allows a person that is adjacent to a water source to take up to 1250 m³/year for “...human consumption, sanitation, fire prevention and watering of animals, gardens, lawns and trees...”¹⁰⁶ No licence is required to exercise this water right; it exists automatically as a result of having a household on land adjacent to a water source. (Note that a person who receives or is entitled to receive water from a municipal water supply, is not entitled to be a household user.)¹⁰⁷ The household user is also automatically assigned the highest priority in the system, and household users are equal in

¹⁰³ The first in time, first in right system, and the priority that it assigns, ensures that during times of water shortage, within a water source, water is first given to those holding a water licence with the most senior priority, regardless of their geographical location in the water system. For example, in times of water shortage, the holder of a licence with a senior priority at the bottom of a river system (the mouth or confluence) would get water in preference to the holder of a licence with a more junior priority, even though holder of the licence with the junior priority may be in the headwaters or in the middle of the river system. The first in time, first in right system is in contrast to the “law of capture” system that existed under common law, where whoever could capture the water first was entitled to take it.

¹⁰⁴ See section 21 of the *Water Act*.

¹⁰⁵ See section 22(3) of the *Water Act*.

¹⁰⁶ See section 1(x) of the *Water Act*.

¹⁰⁷ See section 8 of the Regulation which provides that: “A person who is entitled to receive or receives water under a licence that has been issued to another person for municipal purposes, including community water supply purposes, does not have the right to commence and continue the diversion of water under section 21 [(the household right)] of the Act.”

priority between each other.¹⁰⁸ Inherent in this exception appears to be recognition of the importance of the use of water for direct human requirements in preference to all other uses.

[158] The traditional agricultural user classification stems from a historical understanding regarding riparian rights for agricultural users. When the *Water Act* was being developed in the late 1990s, it became apparent that many agricultural users were using water on the understanding that they were entitled to do so based on riparian rights without obtaining a licence. As a result, these uses were not properly recorded in the priority scheme. The *Water Act* addressed this historical use by creating the traditional agricultural user classification. Traditional agricultural users were grandfathered into the priority scheme by requiring a registration. The registration authorized the use of up to 6250 m³/year of water for agricultural purposes and assigned a priority based on the year of first use of that water. In this way, traditional agricultural users were incorporated into the priority scheme. With respect to the priority system, a registration is addressed in the same way as a licence: its seniority and how it is managed during times of shortage are based on its priority. Again, inherent in this exception appears to be recognition of the importance of the use of water for direct human requirements, here the production of food, in preference to all other uses.

[159] A water licence is obtained by making an application to the Director. Upon receiving of an application for a water licence, pursuant to section 51(1) of the *Water Act*, the Director can refuse to issue a licence or he can choose to issue either a licence *or* a preliminary certificate. (In the case before the Board, the Director chose to issue a preliminary certificate.) A preliminary certificate is a promise that a licence will be issued upon meeting the conditions of the preliminary certificate.¹⁰⁹ A copy of the licence that has been promised – the proposed licence – is attached to the preliminary certificate.¹¹⁰ A preliminary certificate is usually issued

¹⁰⁸ Section 27 of the *Water Act* provides:

“A person who diverts water pursuant to section 21 [(the household right)]

- (a) does not have priority with respect to another person who is diverting water pursuant to section 21, but
- (b) has priority over a person who is entitled to divert water
 - (i) pursuant to an approval, licence or registration, or
 - (ii) that is authorized under this Act other than pursuant to section 21.”

Between householder users the common law “right of capture” appears to prevail: whoever can capture the water first is entitled to it.

¹⁰⁹ See: section 66(4)(a) of the *Water Act*.

¹¹⁰ The proposed licence will specify the essential terms of the licence, including the volume of water allocated

where the Director wants to ensure that the structures that will be required for the project (such as dams, canals, wells, pipelines, etc.) are built properly and inspected before the actual licence will be issued. A preliminary certificate can also include requirements that other work be performed, such as the preparation of reports, before the actual licence is issued.

[160] The *Water Act* provides that a preliminary certificate and proposed licence can be issued with any terms and conditions the Director thinks appropriate.¹¹¹ The *Water Act* sets out the factors the Director “must” consider and the factors the Director “may” consider:

“In considering whether to issue a preliminary certificate, the Director

- (a) **must** consider, with respect to the applicable area of the Province, the matters and factors that must be considered in issuing a licence, as specified in an applicable approved water management plan,
- (b) **may** consider any existing, potential or cumulative
 - (i) effects on the aquatic environment,
 - (ii) hydraulic, hydrological and hydrogeological effects, and
 - (iii) the effects on household users, other licences and traditional users,that result or may result from the diversion of water, operation of a works or provision or maintenance of a rate of flow of water or water level requirements, and
- (c) **may** consider
 - (i) effects on public safety,
 - (ii) with respect to irrigation, the suitability of the land for irrigated agriculture, and
 - (iii) any other matters applicable to the licence that in the opinion of the Director are relevant, including any applicable water guideline, water conservation objective and water management plan.”¹¹² (Emphasis

and the priority number that will be assigned to the licence and may include any other terms and conditions that are to be included in the licence that the Director considers appropriate. See: sections 66(4)(b) and (d) of the *Water Act*.

¹¹¹ See: section 51(1), 51(3) and 66(2) of the *Water Act*. The Director can also issue a licence subject to any terms and conditions that he considers appropriate. This is subject to section 68, which requires that where the Director issues a licence as a result of meeting the conditions of a preliminary certificate, the Director is required to issue the licence as promised, in accordance with the terms and conditions specified in the proposed licence.

¹¹² The Director is required to consider identical matters when issuing a licence. See: sections 51(4) and 66(3) of the *Water Act*. An approved water management plan is a water management plan that has been approved by the Lieutenant Governor in Council in accordance with section 11 of the *Water Act*. A water guideline means a water guideline established by the Minister under section 14 of the *Water Act*. A water conservation objective means the amount and quality of water established by the Director as is necessary for protection of a natural water body or its aquatic environment, or any part of them, protection of tourism, recreational, transportation or waste assimilation uses of water, or management of fish or wildlife, in accordance with section 15 of the *Water Act*. A water

added.)

[161] Once the structures are built properly and inspected, and any other work required is performed, the certificate holder files a certificate of completion with the Director, and if the certificate of completion is acceptable, the Director is required to issue the proposed licence as promised. When the Director issues the actual licence, the terms and conditions are identical to the proposed licence included in the preliminary certificate. However, if the capacity of the structures that were built are less than what was originally contemplated under the preliminary certificate, the Director can reduce the volume of water allocated or reduce the rate of diversion. It is important to note that there are no provisions that allow the Director to amend a preliminary certificate or licence to increase the volume of water diverted. The only way to obtain more water is to obtain an additional licence.¹¹³

B. What role does the purpose for which the water will be used have with respect to the allocation of water under the *Water Act*? (Issue 1(a))

[162] The purpose for which water will be used is addressed in several sections of the *Water Act*. Section 51(1) permits the issuance of a preliminary certificate or licence for any purpose established in the Regulation. Section 11 of the Regulation identifies 13 purposes, ranging from municipal, agricultural, commercial, and industrial use to water management. Other provisions of the *Water Act* also address priority. There is the establishment of a “super” priority for householder users under section 21, and purpose may be considered under declared emergency provisions in section 107(2)(c). There are also specific considerations related to water diversion for irrigation in sections 51(4)(c)(ii) and 66(3)(c)(ii), and for licences used for implementing water conservation objectives under section 51(2). Water uses that would result in transferring water outside of Canada and between river basins are also restricted in sections 46 and 47 of the *Water Act*.¹¹⁴

management plan means a plan with respect to conservation and management of water developed under section 9 of the *Water Act*. (Note that a water management plan is distinct from an approved water management plan.)

¹¹³ The grounds on which a Director may amend a preliminary certificate, including potentially reducing the amount of water allocated, are set out in section 70. Generally this authority exists only when there are significant adverse effects on human health or public safety or the aquatic environment that were not reasonably foreseeable at the time the preliminary certificate was issued, or if there is a breach or misrepresentation or other failure to comply by the certificate holder. The grounds on which a Director may cancel a preliminary certificate are set out in section 71.

¹¹⁴ Section 46 and 47 of the *Water Act* provide:

[163] In his Affidavit, the Director uses a similar analysis to determine that "...the purpose of an allocation of water has a limited role under the *Water Act*."¹¹⁵ On this point, the Board agrees with the Appellants that this argument fails to consider the effect that the purpose of water use has on the full range of factors that are to be considered under sections 51(2), 51(4) and 66(3).¹¹⁶ The Director's determination of the factors that are relevant to a specific application would not be possible without giving consideration to the purpose for which the water is to be used. For example, without knowledge of the use of the water it would not be possible to determine the potential negative or cumulative effects on the hydrologic cycle. Accordingly, the fact that oilfield injection does not return water to the river basin is critically relevant to determining the effects on the aquatic environment and on other users. It is that issue, the shared responsibility of water management, and the ownership of water by all Albertans that underscores the approach taken by the Board with respect to these appeals.

[164] Section 2 of the *Water Act* requires that the Director consider the purpose for which the water is to be used. The overarching purpose of the *Water Act* is set out in section 2, for "...the conservation and management of water, including the wise allocation and use of water...." However, section 2 goes on to state that this must be done while recognizing other factors, including "...the need for Alberta's economic growth and prosperity...." In the Board's view, to give proper meaning to section 2 of the *Water Act*, the Director is required to consider the purpose for which water will be used; he would not be able to properly apply the provisions of the *Water Act* without considering the purpose for which the water is to be used.

"46(1) In this section, 'processed water' and 'municipal water' mean processed water and municipal water as defined in the regulations for the purposes of this Act.

(2) For the purpose of promoting the conservation and management of water, including the wise allocation and use of water, a licence shall not be issued for the purpose of transferring water from the Province outside Canada by any means, unless the licence is specifically authorized by a special Act of the Legislature.

(3) Subsection (2) does not apply to processed water and municipal water.

47 A licence shall not be issued that authorizes the transfer of water between major river basins in the Province unless the licence is specifically authorized by a special Act of the Legislature."

¹¹⁵ Affidavit of David Helmer, exhibit A, page 2, Issue 1(a).

¹¹⁶ Landowner's submissions, page 4, paragraph 12(b).

C. Is the use of water for oilfield injection a valid reason to refuse to grant an allocation under the *Water Act*? (Issue 1(b))

[165] The industrial use of water, which includes oilfield injection, is included in the list of allowable purposes set out in section 11 of the Regulation. On November 7, 2003, the Minister of Environment issued terms of reference for the Advisory Committee.¹¹⁷ The Advisory Committee, which is a separate matter from these appeals, has the task of providing advice to the Minister on water use practice and policy with regard to practices that remove water from the hydrologic cycle. The terms of reference list areas that may be addressed by the Advisory Committee and include: “Setting water conservation targets, including monitoring and reporting to Albertans, for water used for oilfield injection; and other uses that remove water from the hydrologic cycle.”

[166] The establishment of the Advisory Committee is evidence that the Minister is aware that the use of water for oilfield injection is an issue of importance to Albertans. Section 34 of the *Water Act* provides the Minister with authority to prohibit the granting of water diversion rights for an activity when the Minister determines that it should not proceed because it is not in the public interest to do so. The Minister has not used this authority to prohibit the use of fresh water for oilfield injection. Further, the Ground Water Policy¹¹⁸ issued by the Minister of the Environment specifically contemplates the use of potable ground water, stating “...the policy will allow the province to allocate some potable water for oilfield injection.” This supports the Director’s conclusion that the purpose of oilfield injection, in and of itself, is not reason enough for the Director to refuse an application.¹¹⁹

[167] In our opinion, the appropriate approach to determining whether to issue or refuse to issue a preliminary certificate or licence for oilfield injection is to start with a full consideration of the factors set out in sections 51(4) and 66(3) of the *Water Act*, and never forgetting the purposes of the Act under section 2. Under both sections 51(4) and 66(3), the Director may consider “...any other matters applicable to the licence that in the opinion of the Director are relevant, including any applicable water guideline, water conservation objective and

¹¹⁷ Affidavit of David Helmer, Exhibit 3.

¹¹⁸ Landowner’s submission, exhibit D, Ground Water Evaluation Guideline, Appendix A *Ground Water Allocation Policy for Oilfield Injection Purposes*.

¹¹⁹ Affidavit of David Helmer, exhibit A, page 2, Issues 1(b).

water management plan.” The Director is obviously aware that the particular use of water before him is an issue of concern to Albertans. Again, it is a policy currently under review by the Minister’s Advisory Committee, though the report has not been released. The Board considers it appropriate for the Director to consider the Advisory Committee recommendations on the issuance of any subsequent licence.¹²⁰

[168] However, as is discussed more detail (see Issue 1(e)) below, given that oilfield injection removes fresh water from the hydrologic cycle, the Director must take this factor into account when making a decision like the one made in this case. This is required as a result of purpose of the Act, which:

“...is to support and promote the conservation and management of water, including the wise allocation and use of water, while recognizing (a) the need to manage and conserve water resources to sustain our environment and to ensure a healthy environment and quality of life in the present and the future...”¹²¹

The Director should also take into account, when making his decision, the effects on the aquatic environments, the effects from a hydrological and hydrogeological perspective, and the effects on other users of water as is detailed in sections 51(4)(b) and 66(3)(b) of the *Water Act*.

D. Has the Director adequately balanced the economic benefits and environmental impacts of the project? (Issue 1(c))

[169] Section 2 of the *Water Act* requires that conservation and management of water be carried out in a manner that recognizes the need for Alberta's economic growth and prosperity. Section 4 of the *Oil and Gas Conservation Act*, reproduced in the Affidavit of Mr. Brad Graham, filed by the Certificate Holder, sets out that, among other things, the purpose of the *Oil and Gas Conservation Act* is to effect the conservation of, and to prevent the waste of, the oil and gas

¹²⁰ Section 66(4)(d) of the *Water Act* sets out that the preliminary certificate may specify any other terms and conditions to be included in the licence that the Director considers appropriate, while section 66(4)(e) allows the Director to specify in the preliminary certificate that any further terms and conditions may be added to a licence that is issued subsequent to the preliminary certificate.

There is evidence before the Board that the Director appropriately is aware of the Advisory Committee. The Certificate issued to Capstone provides for a Proposed Licence to be issued subject to 17 clauses setting out the terms and conditions that the licensee must comply with. Clause 7 states: “The Director reserves the right to establish water conservation objectives upon 12 months written notice to the licensee.” Therefore, the Board is of the view that the Director has adequately provided for a method to properly take into account any new policy directions that may result from the Minister’s Advisory Committee.

¹²¹ Section 2(a) of the *Water Act*.

resources of Alberta and to provide for the economic, orderly and efficient development in the public interest of the oil and gas resources of Alberta.¹²²

[170] As an operator, the Certificate Holder has an obligation to act in accordance with the *Oil and Gas Conservation Act*, including supporting the economic and efficient development of the oil and gas resources in Alberta.¹²³ The Certificate Holder submits that the economic results of the proposed waterflood scenario are “marginally favorable.”¹²⁴ (A “waterflood” is another name for oilfield injection, coming from the flooding of the oil-bearing formation with water.) On cross-examination by the City of Red Deer, Mr. Graham stated that oilfield injection will increase the recovery of oil from the Tindastoll Belly River Oil Pool from 7 percent of the original oil in place to an expected 14 percent, with a potential ultimate recovery of 15-20 percent (approximately 3 million barrels).¹²⁵ This illustrates the tension between the conservation and economic use of two of Alberta’s natural resources (oil and gas under the *Oil and Gas Conservation Act* and water under the *Water Act*) and the need for policy direction in circumstances where the use of the natural resources, and especially the increasing use of diminishing fresh water, overlaps. The Board expects that this policy direction will be influenced by the Minister’s Advisory Committee that is currently considering this issue and that their recommendations shall address the competing interests in the same way that this was done under the Ground Water Policy.¹²⁶

[171] The Board concurs with the Director that the overall economic analysis and appropriateness of the oilfield flood scheme is best left to the Certificate Holder, as a commercial venture, and the AEUB in the administration of the *Oil and Gas Conservation Act*.¹²⁷ However, the *Water Act*, which is the Minister of Environment’s purview, and particularly section 2, obligates the Director to bear in mind the need for economic growth and prosperity in Alberta.

¹²² Affidavit of Brad Graham, page2, paragraph 6.

¹²³ Affidavit of Brad Graham, page2, paragraphs 6 and 7.

¹²⁴ Affidavit of Brad Graham, page2, paragraph 6, page 1, paragraph 5.

¹²⁵ See: Transcript, February 23 to 25, 2004, at page 608, lines 9 to 19.

¹²⁶ The Board notes that during cross-examination by the Director, the witnesses for both the Services Commission and the City of Red Deer stated that, while they were aware of the Advisory Committee’s work, they had not made representations to that Advisory Committee on the matter of use of surface water for oilfield injection purposes. Given the municipalities’ concerns over the industrial use of fresh water, their lack of participation seemed both unfortunate and illogical. The Board strongly encourages the municipalities to make representations to the Advisory Committee as have been made to this Board as soon as possible.

¹²⁷ Affidavit of David Helmer, page 2, Issue 1(c).

For fresh water, this is best done by fairly and fully considering the impact of the project with respect to the environment, other water users, and water management. This should not be construed to mean that the Director is not obligated to consider whether alternatives to the use of fresh water are available, because as is discussed further (see Issue 1(d)) below, in our view he is required to undertake and articulate this consideration pursuant to section 2 of the *Water Act*, which corresponds to the Water for Life principles.

E. Has the Director adequately considered alternatives to the use of water for this project, including the economics of those alternatives? (Issue 1(d))

[172] Curiously, in his Affidavit, the Director states that "...the Act does not specify that alternative water sources must or may be considered".¹²⁸ In light of the *Water Act*, and even the various water policies and pending studies, the meaning of this statement is not at all clear to the Board. The Director could not have meant that he did not have the discretion to determine if the Certificate Holder considered alternatives because he goes on to explain in his Affidavit the approach he actually took when considering alternatives. First, he considered the application of the Ground Water Policy, which requires the consideration of alternatives to the use of potable ground water for oilfield injection purposes, including surface water, non-potable ground water, and non-water alternatives.¹²⁹ The Director determined that the Ground Water Policy was not applicable to this project on the basis that the policy is specific to ground water and he was satisfied that the Certificate Holder's application before him was for a surface water source. However, he used the Ground Water Policy "...as guidance during the review of the application".¹³⁰ He stated he used the Ground Water Policy to determine what alternatives the Certificate Holder was to investigate and then he reviewed the Source Water Options Report¹³¹ submitted by the Certificate Holder to determine that he was satisfied the Certificate Holder had investigated alternative options and that the proposed source is the most appropriate water source.¹³² The Director also stated he intended to use the Ground Water Policy as guidance for

¹²⁸ Affidavit of David Helmer, page 2, Issue 1(c), page2, Issue 1(d).

¹²⁹ Affidavit of David Helmer, page 2, Issue 1(c).

¹³⁰ Affidavit of David Helmer, page 2, Issue 1(c).

¹³¹ Director's Record, page 1.

¹³² Affidavit of David Helmer, page2, Issue 1(d).

determining the term of the licence in the absence of applicable policy or legislation that may be available at the time the licence is issued.¹³³

[173] The Appellants, who disagree, argue that the Director is required to apply the Ground Water Policy on the basis that the source of the water to be used by the proponent is ground water rather than surface water. This assertion is based on the broad definition of ground water and water well in the *Water Act*, and further, that even if the primary source of the water was Red Deer River, the river is influenced at least in some small way by the ground water.¹³⁴ The Appellants further argued that prudent water management required the Director to consider alternatives to the use of fresh water.¹³⁵ Moreover, if the Director did consider alternatives, the investigation and reporting of the results of the investigation to the public were, according to the Appellants, not carried out with the required level of diligence.¹³⁶

[174] The Ground Water Policy was first issued by then Minister of the Environment Ralph Klein, on March 27, 1990. On February 5, 2003, Alberta Environment issued the Guideline¹³⁷ setting out the information required when submitting an application under the *Water Act*. The Guideline included as Appendix A the previously issued Ground Water Policy, and a revised Appendix C entitled *Policy on Water Diversion From Sands and Gravels Adjacent to a Water Body*.

[175] The *Water Act* defines ground water as "...all water under the surface of the ground whether in solid or liquid state."¹³⁸ We believe the definition of ground water encompasses *all* of the water from the Certificate Holder's Well because the *Water Act* defines ground water *no matter* how or to which source the chemistry links it. It has also been

¹³³ Affidavit of David Helmer, page2, Issue 1(d), page 7, Issue 2(c).

¹³⁴ Landowner's submission, page 6, paragraph 28 to 29; Mr. Gallie's submission, page 3.

¹³⁵ Landowner's submission, page 6, paragraph 28 to 29; Mr. Gallie's submission, page 3., paragraph 30; and Water Service Commission, page2, paragraph 3.

¹³⁶ The Water Service Commission states: "The Director has indicated that no checklist or framework for the review of the application was utilized. It is contested that the due diligence by the Director (Department of the Environment) would require the full investigation of elements and reporting of said investigation to the public." See: Water Services Commission's submission, page 2, paragraph 4.

The City of Red Deer states: "The City of Red Deer would argue that in fact the Director has failed to investigate options. He has failed to require an analytical review by Capstone with respect to the options. Accordingly, the Director is not only is [*sic*] in breach of policy but also the basic philosophy and requirements of the *Water Act* itself." See: City of Red Deer, submission, pages 2 to 3, paragraph 14.

¹³⁷ The Ground Water Evaluation Guideline. See: Landowner's submission, exhibit D.

¹³⁸ Section 1(1)(w) of the *Water Act*.

acknowledged in the written submissions¹³⁹ and in the cross-examination evidence of the Certificate Holder's witness, Mr. Brad Graham that at least trace amounts of ground water may exist in the water that the Certificate Holder will be taking. Specific direction on the application of the Guideline is provided in Appendix C, which in our opinion does not square up with the *Water Act* definitions. A guideline can not override its enabling statute and as a result, to the extent the Guideline is inconsistent with the definitions in the *Water Act*, the Guideline must fall.¹⁴⁰ Appendix C of the Guideline, for example, sets out:

“(1) All projects in sand and gravel deposits adjacent to a water body (river, stream, lake, etc.) will be evaluated according to procedures for licensing and approval of surface water works and diversion.

(2) The Ground Water Evaluation Guideline should be utilized only:

(a) where the applicant proves no hydraulic connection between the sand and gravel deposits and the water body;

and,

(b) where effects on local ground water users may be significant.”

[176] There was no evidence presented to the Board to dispute the Certificate Holder's submission that the Well is in sand and gravel deposits adjacent to the Red Deer River and that the gravel deposits are hydraulically connected to the Red Deer River.¹⁴¹ Further, the water chemistry and related test data submitted in support of the application (see Issue 4(a) below) supports a finding by the Board that, while trace amounts of ground water are mixed with river water, it is highly unlikely that ground water is being captured by the Certificate Holder's Well in sufficient amounts to affect the local ground water. (The effects on the immediate neighbour is considered in subsequent sections of this report.)

[177] That said, the Board is of the view that the Guideline does not override the *Water Act* or that a less rigorous approach for the allocation of surface water for oilfield injection is appropriate. Fresh water, whether from a ground water source or surface water source, is a scarce natural resource, having great value to all Albertans, and there is no reasonable basis on which to

¹³⁹ Affidavit of Brad Graham, page 4, paragraph 15.

¹⁴⁰ “Statutes are paramount over regulations. The presumption of coherence applies to regulations as well as statutes. It is presumed that regulatory provisions are meant to work together, not only with their own enabling legislation but with other Acts and regulations as well.” Sullivan, Ruth (ed.) *Driedger on the Construction of Statutes* (3rd ed.) at page 185.

¹⁴¹ Affidavit of Brad Graham, page 4, paragraph 15; pages 4 and 5, paragraphs 16 to 18.

justify a more stringent approach to the use of one source of fresh water over another in times of increasing demand for both surface and ground water, which we find to be the case particularly in the Red Deer region. In the Board's view, where fresh water is being lost from the hydrologic cycle, the distinction between surface water and ground water is not appropriate. The overall impacts on the environment and humans are the same. There should only one policy and that is for fresh water. The policy should apply to the use of all fresh water for oilfield injection purposes, and, though it is not necessary for this decision, the Board hopes that there will soon be policy direction, that deals with fresh water regardless of its source.¹⁴²

[178] The Board's view that the analysis of the two different sources of fresh water should not be differentiated is supported by the definitions of water, ground water and water well that are found in the *Water Act*:

“1(1)(fff) ‘water’ means all water on or under the surface of the ground, whether in liquid or solid state; ...

1(1)(v) ‘ground water’ means all water under the surface of the ground whether in liquid or solid state; ...

1(1)(kkk) ‘water well’ means an opening in the ground, whether drilled or altered from its natural state, that is used for

- (i) the production of ground water for any purpose.
- (ii) obtaining data on ground water, or
- (iii) recharging an underground formation from which ground water can be recovered,

and includes any related equipment, buildings, structures and appurtenances....”

From these definitions, and for the purpose of applying the *Water Act*, it is clear that ground water is defined not on the basis of the nature of the body of water that provides the water, but rather where the water is located; directly on the surface of the ground or under the surface of the ground. The term is typically used in relation to land, as in “land under which ground water exists.”

[179] Further, the Board's finding in this regard is consistent with water regulation in other jurisdictions, where oil and gas exploration and development is a significant component of

¹⁴² As indicated, it appears to the Board that the term “fresh water” can be easily defined. In *Water and Oil: An Overview of the Use of Water for Enhanced Oil Recovery in Alberta* (Government of Alberta, March 2004), at page 22 defines non-saline water as water “...with less than 4000 mg/l of total dissolved solids (TDS). Often referred to as fresh water.”

the overall economy. For example, the Texas Water Code requires the consideration of economic and technically feasible alternatives for *all fresh water regardless of source*:

“S. 27.0511 Conditions of Certain Permits

... (c) ... if the applicant proposes to inject fresh water into the injection well for enhanced recovery, the railroad commission shall consider whether or not there is some other solid, liquid, or gaseous substance that is available to the applicant and that is economically and technically feasible for the applicant to use for enhanced recovery purposes.

(d) If the railroad commission finds that there is a solid, liquid, gaseous substance other than fresh water available and economically and technically feasible for use in enhanced recovery under the permit, the railroad commission shall include as a condition of the permit, if granted, that the permittee use the other substances found to be available and economically and technically feasible and that the applicant not use fresh water or that the applicant use fresh water only to the extent specifically stated in the permit.”¹⁴³

The Board notes that the Texas Water Code was enacted approximately 20 years ago¹⁴⁴ and that Texas also has a large oil and gas industry, which in the Board’s view makes it a suitable comparison.¹⁴⁵

[180] The Director’s broader consideration of alternatives to the use of any fresh water for oilfield injection is consistent with section 2 of the *Water Act* and is permissible under section 51(4)(b)(ii) and 51(4)(c)(iii) and the parallel provisions in section 66. While there was some inconsistency in the evidence from the Director in this regard, in particular on cross-examination by the City of Red Deer where the Director stated that if an applicant had a demonstrated need for water and another source was available it would be left to the applicant to decide, the Board concludes that on the balance of the evidence the Director did his best to use the Guideline as he

¹⁴³ *Injection Well Act, 27 Texas Water Code, s. 27.0511.*

¹⁴⁴ This provision of the *Texas Water Code* was enacted in 1983.

¹⁴⁵ The Board also notes the *Oklahoma Water Board* defines fresh water as any water “...which has less than five thousand (5,000) parts per million of total dissolved solids...” and which provides that to “...aid the Board in making its determination, applicants filing for the use of fresh water for enhanced recovery of oil and gas, in addition to all other requirements, must furnish the following as part of ... the application ... an economic study ... [and an] evaluation of the other recovery methods or alternatives considered and why recover requiring the use of fresh water was deemed to be necessary or most feasible.”

The *Oklahoma Water Board* regulates oilfield injection using surface water and ground water in the same way; the legislation for surface water and ground water parallel each other. See: 785 *Oklahoma Administrative Code* s.785-30-3-2 and 785 *Oklahoma Administrative Code* s.785-20-3-4.

understood it. He should have reference more to the *Water Act* provisions that we have cited, than the Guideline.

[181] The Director relied on the Certificate Holder's Source Water Options Report to determine that he was satisfied the proponent had investigated alternative options and the proposed source of water was the most appropriate water source. Again, this approach is consistent with the requirement in the Ground Water Policy, which places the onus on the applicant to undertake an appropriate level of investigation into surface water, non-potable ground water and non-water alternatives prior to submitting an application for the use of ground water.¹⁴⁶

[182] The Source Water Options Report was prepared in December 2002 by Water Resources Inc. The Source Water Options Report sets out a number of areas where information was provided directly by the Certificate Holder.¹⁴⁷ The alternatives considered include surface water, shallow and potable ground water, intermediate depth potable ground water and non-potable ground water, deep non-potable ground water, and treated waste water and other pressure maintenance fluids, including CO₂.¹⁴⁸ The study considered technical, regulatory and implementation cost factors and concluded that water from the Red Deer River was the preferred water source.¹⁴⁹

[183] The Appellants have argued that Source Water Options Report was not a substantive investigation into alternatives and was largely based on conjecture.¹⁵⁰ The Board accepts that the Source Water Options Report considered each alternative but with varying level of detail. Potable ground water, while ranked favorably from a technical and cost perspective, was eliminated as a viable option based on the potential interference with existing residential and agricultural users and that the use of potable ground water is discouraged as reflected in the Ground Water Policy.¹⁵¹ Similarly, CO₂ was quickly discounted as a viable option on an

¹⁴⁶ Ground Water Policy, paragraph 4.

¹⁴⁷ See: Source Water Options Report, page 7, section 6.4 Deep Potable Ground Water, and page 9, section 6.6 Other Pressure Maintenance Fluids.

¹⁴⁸ Source Water Options Report, pages 4 to 12.

¹⁴⁹ Source Water Options Report, pages 4 to 12.

¹⁵⁰ Landowner's submission, page 5, paragraph 22.

¹⁵¹ Source Water Options Report, page 13.

economic basis.¹⁵² Further, while the Board concurs with the Appellants that more detailed technical and cost information on CO₂ as an alternative could have been provided by the Certificate Holder, the Board accepts the Certificate Holder's evidence, including the testimony that the cost of gathering and using CO₂ is prohibitive (\$15,000,000 to \$20,000,000) when the nearest source is 50 to 60 miles away.¹⁵³ While the basis for this estimate is not set out in detail, the cost estimate is 2 to 4 times greater than the next most costly alternatives of deep non-potable ground water or treated waste water.¹⁵⁴ For that option, no further detail is required.¹⁵⁵

[184] A more difficult determination, which leaves the Board with a great deal of uncertainty, is whether non-potable water options were adequately considered by the Certificate Holder and subsequently by the Director. The Source Water Options Report summary for the option "GW - Intermediate Depth Potable and Non-Potable"¹⁵⁶ states: "No detailed testing to date, preliminary mapping shows limited ground water development potential, expected lesser public opposition, moderate to high cost to investigate and develop..." while the follow-up required is stated as "...no further action at present."¹⁵⁷ These statements imply very little investigation of this alternative, and suggest to the Board that the option was not intended to be fully investigated until an application for surface water was submitted. Further, on cross-examination by the Water Services Commission, evidence was provided by Mr. Brad Graham that the Certificate Holder is currently investigating the possibility of trucking 100 to 150m³/day of produced water from a source near Innisfail.¹⁵⁸ This is good news, but there is no mention of this option in the Source Water Options Report and it is of concern to the Board that this

¹⁵² Source Water Options Report, page 13.

¹⁵³ Transcript, February 23 to 25, 2004, pages 627 to 628, lines 23 to 14.

¹⁵⁴ See: Director's Record, page 16.

¹⁵⁵ There was no evidence presented to the Board that these estimates were so far outside a reasonable range as to make the magnitude of the estimate illogical and the Board finds that the level of detail provided is adequate given the difference in costs between alternatives. Moreover, the Board generally accepts the testimony of the Certificate Holder's witness, Brad Graham, on cross examination by the Water Services Commission that CO₂ is not a viable option and there would be no project if CO₂ was the only alternative. This finding is supported by other evidence presented to the Board, including that there is only one commercial venture in Alberta using CO₂, that CO₂ is typically used as a third stage in the recovery process (after water flooding), and finally, that when CO₂ is used it is used in conjunction with water and as such would not eliminate the need for water from one source or another (although it would reduce the volume of water required).

¹⁵⁶ See: *Assessment of Source Water Options for the Tindastoll Belly River Oil Pool Waterflood*.

¹⁵⁷ See: Director's Record, at page 15.

¹⁵⁸ Transcript, February 23 to 25, 2004, at pages 599 to 600, lines 8 to 9.

investigation may not have taken place by the Certificate Holder had the Certificate gone unchallenged.

[185] A more complete approach to the analysis of alternatives would be a two step analysis. First, the technical, economic and regulatory feasibility of alternatives to fresh water should be fully considered. The depth of the analysis may vary for each alternative but it would be consistent with the *Water Act*'s purposes to prove to the Director (in writing and with greater documentation) the feasibility of the "next best" alternative. In the judgment of the Board, *only* if there is no other feasible alternative, such as adjacent supplies of produced water, which in this case there may be according to Mr. Graham's statement cited above, should fresh water be considered.

[186] The second step of the analysis would require that the proponent demonstrate that the required fresh water will be used efficiently. A full analysis of efficient use would consider both the volume of water used and the results expected from the use of the water. This approach to the analysis would provide proponents with the appropriate incentive to apply for the minimum amount of water necessary to accomplish the task, thus encouraging proponents to combine water with other available fluids, recycle as much water as possible, and minimize waste by using the most efficient processes available. In an oilfield injection scenario the measure of results obtained must reflect the economic balancing such as the tradeoff between fresh water used and oil recovered. That information should also be presented to the Director.

[187] In the Certificate Holder's case, the first step of the analysis would require the Certificate Holder to fully consider the feasibility of at least the Intermediate Depth Potable and Non-Potable water sources and report these findings to the Director. The second step would require the Certificate Holder to consider and apply for only the minimum amount fresh water necessary to carry out the project. The evidence presented by the Certificate Holder is that approximately 5 barrels of surface water is required to recover 1 barrel of oil. However, this appears to have been based on an application for the maximum amount of surface water that could be required, rather than focusing on the minimum of amount of water necessary to carry out the project. Given the priorities of the *Water Act*, the scarcity of fresh water in the white (agricultural) areas of the Province,¹⁵⁹ and the increasing demand for fresh water, the 5:1 fresh

¹⁵⁹ See: *Water and Oil: An Overview of the Use of Water for Enhanced Oil Recovery in Alberta* (Government

water to oil ratio seems high to the Board. Ultimately, the goal is to use oil and gas resources in accordance with section 4 of the *Oil and Gas Conservation Act*, but a competing goal of the *Water Act*, in accordance with section 2, is to use surface water only when it makes sense to do so, not when it makes an inefficient or marginal project economic solely because there is little or no economic cost associated with using that option.

[188] Based on this analysis, the Board is not going to cancel the Certificate as the Appellants have requested. Instead, the Board recommends that the Certificate, and associated Proposed Licence, be varied. We believe the volume of water allocated in the Proposed Licence should be reduced to 600 m³/day, for a total allocation of 219,000 m³ annually. In the Board's view, this allocation reflects the minimum amount of water required for the project for the term of the licence, which the Director indicated would be for one year, and is consistent with the purposes of the *Water Act* as detailed in section 2. It is also consistent with a full consideration of the provisions detailed in sections 51 and 66 of the *Water Act*. In the Board's view, this approach properly recognizes the value and importance of wisely using the limited amount of surface water that is available in this constrained area of the Province.

[189] Further, we strongly recommend that the Certificate be varied to add a condition that requires the Certificate Holder to utilize produced water, or an alternative water sources, where at all possible. The Certificate should be amended to require the Certificate Holder, as a condition of obtaining the Proposed Licence, to provide the Director with a report detailing its more complete investigation of alternate water sources, including particularly produced water as identified by Mr. Graham.

[190] If this report indicates that an alternate source of water is viable, then the Certificate Holder should be encouraged and required to use water from this alternate water source. If the report indicates that the viable alternate water source can provide 300 m³/day or less, then the Certificate Holder should be allowed to use this additional water without any reduction in the amount of water granted under the Proposed Licence when it is issued. This would bring the Certificate Holder to 900 m³/day (600 m³/day in the Proposed Licence and 300 m³/day from the alternate source of water), which is the full amount that it requested in its application.

[191] However, if the report indicates that the viable alternate water source can provide more than 300 m³/day, then for every 1 m³/day of water that the viable alternate water source can provide in excess of 300 m³/day, the amount of water allocated under the Proposed Licence, when it is issued, should be reduced by 1 m³/day. For example, if the alternate water source can provide 150 m³/day, then the Proposed Licence would still be issued for 600m³/day, and the Certificate Holder would be allowed to use 600m³/day of fresh water under the Proposed Licence and the 150 m³/day from the alternate water source, for a total water use of 750 m³/day. However, if the alternate water source can provide 350 m³/day, the amount of water from the alternate water source in excess of 300 m³/day is 50 m³/day (350 – 300 = 50). Therefore, the Proposed Licence would be issued for 550 m³/day (600 – 50 = 550), and the Certificate Holder would be allowed to use 550 m³/day of fresh water under the Proposed Licence and 350 m³/day from the alternate water source, for a total water use of 900 m³/day.

[192] Again, in the Board's view, this approach is consistent with the cautious approach of the *Water Act* as detailed in section 2 and is consistent with a full consideration of the provisions detailed in sections 51 and 66 of the *Water Act*. In the Board's view, this approach properly recognizes the value and importance of wisely using the limited amount of surface water that is available in this constrained area of the Province.

[193] In the Board's view the following information should be required by the Director to determine whether use of fresh water for oilfield injection is beneficial and consistent with the *Water Act*. This information includes:

- (a) the extra cost per barrel of recovered oil if the applicant is required to use brackish water in the region;
- (b) expected amount of oil to be recovered and its value;
- (c) the expected cost of fresh water versus the other use of other water resources;
- (d) an inventory of all wells, including fresh water wells, salt water wells, disposal wells and other wells within 3 km of the diversion point;
- (e) an inventory of all other operators within the general area, in approximately a 20 km radius that may provide an alternative source of water, including salt water, brackish water, or produced water;
- (f) any applicable information on recycling or reusing water;
- (g) any geological data to provide an indication of the potential availability of brackish water;

- (h) an economic and technical review including: the total cost of the project and the value of enhanced oil recovery that might be gained, more details on the comparisons on the availability of brackish water, produced water, and fresh water;
- (i) a detailed explanation as to why brackish water or produced water can not be used;
- (j) a review of other available technologies and their feasibility, such as carbon dioxide or nitrogen;
- (k) any other information the Director may require.

F. Has the Director adequately considered the removal of the allocated water from the hydrological cycle? (Issue 1(e))

[194] The Director states that the decision to issue the Certificate was based on the hydrological assessment from Mr. Sal Figliuzzi.¹⁶⁰ Mr. Figliuzzi's evidence before the Board was that there will be "absolutely no impact on the hydrologic cycle." That cannot be true. In the context of the impact the withdrawal of water by the Certificate Holder will have on levels of precipitation in the *global* hydrologic cycle this effect may be trivial. However, since Mr. Figliuzzi repeated the phrase a number of times, the Board rejects this statement to the extent that there is no impact that should be a concern for the Director or the Minister. The Certificate Holder has requested to remove up to 900 m³/day of water for some 20 years *when there is no possibility of returning the water to the hydrologic cycle for a "million years"*.¹⁶¹ This is the critical difference between the use of fresh water for oilfield injection and fresh water use by other users. Municipalities return water to the river basin at rates ranging from an annual average of 82.8 percent¹⁶² to over 100 percent (as a result of ground water flow).¹⁶³ Even water use for irrigation returns water to the hydrologic cycle through evaporation or otherwise. Further, most industrial processes eventually return a significant amount of water to the environment after treating it. However, this is *not* the case for fresh water used for oilfield injection and this fundamental difference, the effective loss of fresh water, is the basis for the Board's finding that a much higher level of scrutiny of the alternatives to fresh water usage is

¹⁶⁰ Affidavit of David Helmer, page 3, Issue 1(e).

¹⁶¹ Transcript, February 23 to 25, 2004, at page 433, lines 1 to 8, Mr. Sal Figliuzzi stating that that it would take approximately one million years for fresh water injected in the oilfield injection process to return in the hydrologic cycle.

¹⁶² Affidavit of Paul Goranson, Schedule "A", page 3.

¹⁶³ Affidavit of Paul Goranson, Schedule "A", page 3.

appropriate and necessary. This is especially true because if Mr. Figliuzzi is correct, we are recommending that the Minister make water use decisions for the benefit of Albertans, and subsequent Directors, for the next million years.

[195] In the Board's view, one of the core concepts that is reflected in section 2 of the *Water Act* is "sustainable development". Section 2 provides in part that one of the purposes of the *Water Act*:

"...is to support and promote the conservation and management of water, including the wise allocation and use of water, while recognizing (a) the need to manage and conserve water resources to sustain our environment and to ensure a healthy environment and quality of life in the present and the future...."

The concept of sustainable development was most definitively discussed in the *Brundland Report: Our Common Future*. This report defined sustainable development as "...development seeking to meet the need of the present generation without compromising the ability of future generations to meet their own needs."¹⁶⁴ In order to give any meaning to this concept, it is necessary to accept that when fresh water, regardless of its source, is injected into the ground for the purposes of oilfield injection, it is for all practical purposes lost – it is lost to us, it is lost to our children, and in this case, our children's children for thousands of generations to come.

[196] The Board recognizes that there is a difference in the "recharge capacity" of surface freshwater systems and subsurface freshwater systems. One of the foundations behind the Ground Water Policy and the preference for the use of surface water over ground water is that surface water systems "recharge" practically instantaneously in comparison to ground water systems. However, to completely ignore the loss of fresh water without a greater justification is to disrespect the true value of fresh water to all the local water users and is inconsistent with the structure of the *Water Act* as detailed in section 2.

[197] This finding is supported by the *Water Act*, sections 51(4)(b)(ii) and 66(3)(b)(ii), which specifically allow the Director to consider "...any existing, potential or *cumulative* hydraulic, hydrological and hydrogeological effects..." And which he should. For the purpose of promoting the conservation and management of water, including the wise allocation and use of water, section 46(2) prohibits the issuing of a licence for the purpose of transferring water from the Province to outside Canada by any means unless the licence is specifically authorized

¹⁶⁴

See: <http://www.unesco.org/education/esd/english/sustainable/sustain.shtml>

by a Special Act of the Legislature. Similarly, section 47 prohibits the issuance of a licence for the transfer of water between major river basins in the Province, unless the licence is specifically authorized by a Special Act of the Legislature. While the Board does not agree with the Landowners that the use of water for oilfield injection may constitute a transfer between major river basins in the Province such that section 47 of the Act prevents a licence from being issued for oilfield injection purposes, the Board does recognize that it is consistent with the *Water Act* to carefully scrutinize a licence to avoid the effective removal of water from the river basin.¹⁶⁵

[198] As the Board has stated, in its view, it is necessary for the Director to consider the purposes for which water is to be used in the context of the provision of the *Water Act*. In this regard, it is necessary for the Director to conclude that the use of water for the purpose of oilfield injection, according to Mr. Figliuzzi, removes it from the hydrologic cycle for a million years. This having been said, the Board is of the view that the recommendation to reduce the amount of water allocated under the Proposed Licence to 600 m³/day, or less if another viable alternative source of water is found, adequately addresses this concern.

G. Does the Preliminary Certificate and Proposed Licence provide adequate protection for: 1) other water users, 2) recreational water users, 3) fish and wildlife, and 4) the aquatic environment, including instream flow needs? (Issue 2(a))

[199] As a preliminary matter, the Board was somewhat surprised to hear in cross examination by the Certificate Holder, that the witnesses for the City of Red Deer¹⁶⁶ and the Water Services Commission¹⁶⁷ had not seen the Certificate provided to the parties in the Director's Record, nor were they aware of its terms and conditions at the time the Hearing began.¹⁶⁸ Their specific comments on the terms and conditions and how it related to their concerns would have been assistance to the Board.

[200] With respect to the adequacy of the protection provided by the Certificate and Proposed Licence as now varied, the Board is satisfied that the principle of prior appropriation of

¹⁶⁵ Landowner's Final Argument, pages 13 to 14, paragraphs 82 to 85.

¹⁶⁶ Transcript, February 23 to 25, 2004, at pages 270 to 271, lines 3 and 4.

¹⁶⁷ Transcript, February 23 to 25, 2004, at page 161 to 165.

¹⁶⁸ Accordingly, these parties or their witnesses were not aware of the terms and conditions of the Certificate and Proposed Licence. The Board is of the view that this prevented these Appellants from providing meaningful input into the development of the appropriate terms and conditions.

“first in time, first in right” reflected in the priority system established under the *Water Act*, and the related remedial and enforcement measures included in the *Water Act*, provides adequate protection for existing licenced users of water from the Red Deer River. Specifically for the Appellant municipalities, the Board notes that the Water Services Commission, the City of Red Deer, and the North Water Users Group, whose interests were presented to the Board by the City of Red Deer, the Water Services Commission and a number of the intervenors, all have senior licences or pending applications before the Director that have *priority* over the Certificate Holder sufficient to provide for these communities’ needs for the next 50 years, including forecasted additional growth.¹⁶⁹ This protection offsets their argument that they will lose water solely because of the Certificate Holder. The impact on the more immediate neighbours is considered in Issue 4(a) below.

[201] The Director did have evidence before him to consider the impact of the diversion on the flow of the Red Deer River when deciding that there is sufficient water available to allow for the diversion. The Director relied on data and information provided by Mr. Peter Pui and Mr. Sal Figliuzzi to reach his decision.¹⁷⁰ While Mr. Figliuzzi’s testimony was unclear at times, the assessment conducted by the Water Program Evaluation and Reporting Section of Alberta Environment included a comparison of the requested diversion (based on the original application volume of 1000 m³/day) to both the average and minimum annual flows and to minimum monthly and daily flows for the Red Deer River at Red Deer for the period of 1984-2001 which reflects the flow pattern after construction of the Dickson Dam.¹⁷¹ The conservative estimate of the proposed daily withdrawal as a percentage of the minimum daily flow rate is 0.077 percent.¹⁷² The analysis was reviewed by a second basin hydrologist, the Head of the Water Assessment Unit, and Mr. Figliuzzi.¹⁷³ Mr. Figliuzzi also considered the requested allocation relative to the existing licence allocations which are estimated at 19.94 percent of the minimum annual flow and 10.13 percent of the mean annual flow of the main stem of the Red Deer River, and in his determination that the requested allocation represented a relatively minor percentage

¹⁶⁹ Affidavit of David Helmer, Exhibit A, page 4, paragraph 3.

¹⁷⁰ Affidavit of David Helmer, Exhibit A, page 7, Issue 3.a.

¹⁷¹ Affidavit of Sal Figliuzzi, pages 2 and 3, paragraphs 3 to 5.

¹⁷² Affidavit of Sal Figliuzzi, page 3, paragraph 6.

¹⁷³ Affidavit of Sal Figliuzzi, page 4, paragraph 9.

of the residual flow in the Red Deer River.¹⁷⁴ The Board notes this analysis considers allocated volumes rather than actual consumed volumes which are typically substantially less.¹⁷⁵ On the basis of this analysis, Mr. Figliuzzi concluded that granting the request would not have an impact on licences with a higher priority or on Alberta's ability to meet its obligations to downstream provinces.¹⁷⁶ This assessment of Alberta's ability to meet its obligations to downstream provinces is discussed in further detail in Issue 5(c) below.

[202] In addition, in accordance with the *Water Act*, the Director sets out in the Certificate a number of conditions that will apply to the Proposed Licence when it is issued. First, clause 3 places a condition on the Proposed Licence that allows the withdrawal of water only when the residual flow of the river exceeds the current required minimum residual flow levels of 4.25 m³/second. Second, the Director has reserved the right to modify the conditions of the Proposed Licence based on recommendations resulting from the Instream Objectives Study on the Red Deer River, and particularly reserved the right to incorporate minimum flow values identified in the Instream Objectives Study. Third, in further recognition that water conservation objectives are currently under development as part of Phase 2 of the SSRBWMP¹⁷⁷ the Director has further reserved the right to establish water conservation objectives upon 12 months written notice to the licensee.

[203] Given the reasons set out above, combined with the fact that the theoretical drop in the river level as a result of the withdrawal of 900 m³/day is estimated to be 0.3 millimeters¹⁷⁸ and the evidence of Mr. Trevor Rhodes, a fisheries biologist with Alberta Sustainable Development, who testified at the hearing, we conclude that the Director properly considered the needs of recreational water users and fish and wildlife. However, we remain worried that 2001 was the lowest flow year in the Red Deer River for the 27 years analyzed in the *1996-2001 Update to the South Saskatchewan River Sub-Basin Contributions to International and Interprovincial Water-Sharing Agreements*.¹⁷⁹ Although, the Board noted that given the current

¹⁷⁴ Affidavit of Sal Figliuzzi, pages 5 to 7, paragraphs 9 to 15.

¹⁷⁵ Affidavit of Sal Figliuzzi, pages 5 to 7, paragraphs 9 to 15.

¹⁷⁶ Affidavit of Sal Figliuzzi, pages 5 to 7, paragraphs 9 to 15.

¹⁷⁷ Landowner's submission, Exhibit C: *South Saskatchewan River Basin Water Management Plan Phase 2: Background Study*.

¹⁷⁸ Rebuttal Affidavit of David Helmer, page 3, paragraph 13.

¹⁷⁹ Rebuttal Affidavit of Sal Figliuzzi, Exhibit B, page 15.

instream flow objectives for the Red Deer River were determined before the Dickson Dam was constructed and the water flow of the river is now managed such that this limit is never actually expected to be reached, we still believe an additional safety margin of 10 percent should be applied such that the clause setting out the required minimum residual flow level should be amended to 4.68 m³/second and not 4.25 m³/second. In the Board's view, this will also provide additional protection for local water users, recreational water users, fish and wildlife, and our aquatic ecosystem.

H. Are the Terms and Conditions of the Preliminary Certificate and Proposed Licence adequate with respect to: 1) monitoring, 2) reporting, 3) minimum flow rates, and 4) maximum pumping rates? (Issue 2(b))

[204] The conditions of the Proposed Licence related to monitoring and reporting are set out in clauses 11 and 12. Clause 11 requires that the diversion site be equipped with a cumulative meter or other device to register the quantity of water pumped, and that the licensee measure the water levels at the diversion site well and an observation well on a continuous daily basis, and at the Conn's well on a weekly basis while the pump is operating. Clause 12 requires the licensee to record and retain for each calendar year the following information and provide the information to the Director on or before January 31st each year for the preceding year the following: (a) monthly readings of the number of cubic metres of water pumped from the diversion site, including dates and times the readings were taken, (b) measurements of the water levels at the diversion site well, the observation well and at the Conn's well, and (c) the total annual quantity of water pumped expressed in cubic metres, as well as any information requested by the Director. Further, under clause 6 the Director reserved the right to amend the monitoring systems and annual water monitoring information if at anytime there is information indicating unreasonable interference due to the operation of the project on the source of water supply, other water users, instream objectives, and the aquatic environment that cannot be satisfactorily remedied.

[205] Clause 6 is supported by Clause 9 and 10.¹⁸⁰ These conditions, combined with the Board's recommendations set out under Issues 2(c) and 2(d) for the term and renewal of the

¹⁸⁰ Clause 9 requires that the licensee investigate all written complaints relating to allegations of surface water and ground water interference as a result of the diversion site(s) operation within a distance specified by the Director. Clause 10 requires that the licensee provide a report to the Director, within a specified time by the

Proposed Licence, which are discussed below, provide for an ongoing review of the water allocation and any discernible impacts on the water supplies of other water users, including the immediate neighbours, would be a consideration for the Director at the time of a renewal application.

[206] The Landowners suggested, among other things, that the monitoring be extended to wells that are not owned or operated by parties who are receiving financial benefits from the Certificate Holder's operation in order to address any interest or motivation which might prevent the parties from raising concerns with Alberta Environment as they arise and to allow for monitoring of the Landowner's lands to ensure any potential adverse impacts are addressed. We disagree.

[207] The Board does not find that further monitoring of this type is required; there is no evidence to suggest that the Certificate Holder will not act in accordance with the monitoring requirements. Furthermore, there are enforcement provisions established under Part 10 of the *Water Act*, which we believe that Alberta Environment should be especially cognizant about. The Board recommends that clause 6 of the Proposed Licence be amended to provide that the "unreasonable interference" and "satisfactorily remedied" are both to subject to the discretion of the Director. Further clause 10 of the Proposed Licence should be changed as follows: First, clause 10 should be strengthened to require the Certificate Holder to notify the Director and provide the Director with a copy of a complaint that is received directly by the Certificate Holder. Second, clause 10 should require that within a short period of time to be set by the Director, the Certificate Holder provide a plan for the investigation of a complaint and that there be a disposition of the complaint to the satisfaction of the Director within a time frame established by the Director. Third, the clause should be amended to permit the Director, when the Director is of the opinion that it is warranted to do so to protect existing users, to shut in the diversion until the complaint is investigated and resolved.

[208] The Board has an additional concern about the terms and conditions of the Certificate. As we have discussed, the purpose of a preliminary certificate is to promise a

Director, outlining the results of any investigation relating to alleged interference, and remedial or mitigative measures as a result of impact due to the operation of the diversion site. Clause 10(2) permits the Director to suspend or cancel the licence if the licensee fails to satisfy the Director of the investigative and mitigative measures relating to the alleged interference.

licence, with certain terms and condition, to the holder of the preliminary certificate upon meeting the terms and conditions of the preliminary certificate. The usual structure of a preliminary certificate is to allow the holder of the preliminary certificate to construct works or complete studies prior to the issuance of the licence. Upon completion of construction of the works or completion of the studies, the holder of the preliminary certificate files a certificate of completion with the Director, and if the Director is satisfied that the terms and conditions of the preliminary certificate have been met, he is required to issue a licence.

[209] In this case, in reviewing the Certificate, there does not appear to be any clear terms and conditions that need to be met in order for the Certificate Holder to get the Proposed Licence. The Board surmises that the requirement was intended to ensure that the Certificate Holder constructed the works necessary for its project, however, this is by no means clear. The Board is perplexed as to why the required terms and conditions are not more clearly stated. This could result in significant uncertainty for both the Director and the Certificate Holder. As a result, in addition to a number of other recommendations for amendments to the terms and conditions of the Certificate, the Board recommends that the terms and conditions of the Certificate be varied to include a requirement that the works necessary to allow the Certificate Holder to take its allocation be properly constructed prior to the Proposed Licence is issued. Further, to allow extra time if necessary for the Certificate Holder to meet the new terms and conditions of the Certificate, the Board will also be extending the expiry date of the Certificate from July 23, 2004 to July 23, 2005.

I. Is the term of the Proposed Licence appropriate? (Issue 2(c))

[210] The Director stated that his intention, in the absence of applicable policy or other legislation in the future, is to issue the initial licence using the Ground Water Policy for guidance.¹⁸¹ The Ground Water Policy provides for a term of one year with subsequent five year terms thereafter. While the Board concurs with the Director's intention, it is not clear to the Board that the Director has this authority under the *Water Act* and the Regulation. Section 51(5) of the Act requires that a licence include an expiry date determined in accordance with the

¹⁸¹ Affidavit of David Helmer, page 7, Issue 2(c.)

regulations. The section of the Regulation for considering a licence for a term of less than 10 years state:

“12 (1) If there is an applicable approved water management plan, an order of the Minister or a water guideline that specifies what an expiry date of a licence should be or how an expiry date of a licence should be determined, the Director must determine the expiry date of the licence in accordance with that plan, order or water guideline.

(2) Subject to subsection (3), if there is no applicable approved water management plan, order of the Minister or water guideline that specifies what an expiry date of a licence should be or how an expiry date of a licence should be determined, the Director must issue a licence with an expiry date of

(a) 10 years,

(b) less than 10 years if

(i) the applicant for the licence has applied for a licence with an expiry date of less than 10 years, or

(ii) in the opinion of the Director, the expected duration of the project is less than 10 years.”

(Subsection 3 deals with licences issued for municipal, agricultural, irrigation, or water conservation objective purposes.)

[211] Once it is determined that the Ground Water Policy is not applicable and that existing SSRBWMP does not address the matter of licence terms, the Director is restricted to issuing a licence for a 10 year term unless the applicant has applied for a shorter duration or the expected duration of the project is less than 10 years. The application submitted by the Certificate Holder was for a term of 20 years.¹⁸² Notwithstanding that there is some evidence that the actual project duration will be between 10 and 15 years,¹⁸³ there is no evidence that the expected duration of the project is less than 10 years. Therefore, absent a Ministerial Order, the term of the licence must be set for 10 years. This further underscores the need for development of a formal guideline for the use of surface water for oilfield injection and, if necessary, changes to the Regulation.

[212] The Board finds that there is additional authority to set the term of the Proposed Licence. Under section 100(1)(c) of EPEA, in response to Report and Recommendations from the Board, the Minister may make any further order that the Minister considers necessary for the

¹⁸² Director's Record, page 295, Application Under the *Water Act* for Approval and/or Licence.

purpose of carrying out any decision following this appeal. This approach is also supported by the fact that the Minister is also empowered to make guidelines that would bind the Director with respect to the term of the Proposed Licence in this case pursuant to section 14 of the *Water Act*.

[213] The Board therefore recommends that in accordance with section 100(1)(c) of the EPEA and section 12(1) of the Regulation, the Minister order that the initial term of the Proposed Licence is to be for one year.

[214] The subsequent terms of the Proposed Licence should be established in accordance with the policy established either under Phase 2 of the SSRBWMP, or a revised oilfield injection policy in place at the time, and based upon the alternatives assessment evidence, filed at the time of the application for renewal.¹⁸⁴ This will also permit the Certificate Holder to offer and the Director to consider any matters related to the use of fresh water and alternatives that may arise, any relevant information relating to an impact on the immediate neighbours, and any relevant information arising from the AEUB approval process. In order to ensure that the information contemplated is available at the time of the renewal, the Board further recommends that the Minister's order state that if either Phase 2 of the SSRBWMP or change in the regulations has not been issued at the date of renewal, (such that authoritative guidance on future terms of the Proposed Licence are not available to the Director,) the Director

¹⁸³ Affidavit of David Helmer, page 7, Issue 3(a).

¹⁸⁴ The Board notes that the licence renewal mechanism prescribed in the *Water Act* is a "default renewal". Section 60(1) of the *Water Act* provides that upon application for a renewal, the Director must either renew the licence or refuse to renew the licence in accordance with subsection (3). Section 60(3) provides for limited number of reasons that the Director may refuse to renew the licence, including where the water has not been used for more than 3 years. Specifically, section 60(3) provides:

- "The Director may decide not to renew a licence only if
- (a) the Director is of the opinion that it is not in the public interest to renew the licence,
 - (a.1) the licensee is indebted to the Government,
 - (b) the renewal of the licence would be inconsistent with an approved water management plan,
 - (c) the water conservation objective of a natural water body from which the diversion of water will be made is not being met,
 - (d) the renewal, in the opinion of the Director, would cause a significant adverse effect on the aquatic environment,
 - (e) subject to the regulations, in the opinion of the Director,
 - (i) there has been no diversion of any of the water allocated in the licence or there has been a failure or ceasing to exercise the rights granted under the licence over a period of 3 years, and
 - (ii) there is no reasonable prospect that the licensee will resume diversion of all or part of the water specified in the licence or resume the exercise of the rights granted under the licence, or
 - (f) there is a term or condition of the licence that the licence is not renewable."

is to renew the Proposed Licence for a second one year term. Finally, if no applicable plan or guideline is in place after the second one year term, it is recommended that the Minister's order should further require that any subsequent renewal of the Proposed Licence not exceed a term of three years until such time that the policy or regulatory framework is better established, recognizing that the alternatives assessment for any licence application is always required by section 2 of the *Water Act*.

J. Are the renewal mechanisms related to the Proposed Licence appropriate? (Issued 2(d))

[215] Section 61(1) of the *Water Act* permits the Director to, subject to the regulations, conduct a public review with respect to the renewal of a licence. The term of the Proposed Licence, and the associated renewal requirements, recommended by the Board in Issue 2(c) will still allow for the incorporation of the policy direction provided by (1) the SSRBWMP Phase 2, or (2) the Advisory Committee's work, (3) information from the AEUB approval process, and (4) any newly filed information that may come from the immediate neighbours or elsewhere.

K. Is the volume of water allocated appropriate, including taking into account the proposed length of the project and the availability of water in the Red Deer River? (Issue 3(a))

[216] The evidence from the Certificate Holder is that the actual fluid consumption will vary as the project is phased in, reaching a peak of 750 to 900 m³/day within 2 to 3 years and then declining as the project phases out.¹⁸⁵ Further, the maximum requirement of 750 to 900 m³/day will depend on the number of water injection wells that are required.¹⁸⁶ Ultimately, the requirement for fluid will be a function of success over the life of the project and the optimum voidage replacement ratios determined in conjunction with the AEUB.¹⁸⁷ As is discussed above, the Board also has the evidence of the Certificate Holder's witness, Mr. Brad Graham, that the Certificate Holder is currently investigating the possibility of trucking 100 to 150 m³/day of produced water from a source near Innisfail.¹⁸⁸ The Board accepts that the nature of the project

¹⁸⁵ Transcript, February 23 to 25, 2004, at pages 612 to 613, lines 20 to 3.

¹⁸⁶ Transcript February 23 to 25, 2004, at page 578, lines 1 to 13.

¹⁸⁷ Transcript February 23 to 25, 2004, at pages 613 to 614, lines 17 to 1.

¹⁸⁸ Transcript February 23 to 25, 2004, at pages 599 to 600, lines 18 to 9.

is such that the requirement for injection fluid of any type will vary over the life of the project and will depend, among other things, on the reaction of the specific reservoir as the project progresses.

[217] The *Water Act* permits the Director to amend a licence to reduce a water allocation pursuant to section 54 of the *Water Act*, in certain circumstances. However, the Director does not have authority to amend a water licence to increase the water allocation over the term of the licence. This is to protect the integrity of the “first in time, first in right” principle. However, it also encourages a proponent to apply for the maximum allocation of water required at the outset and restricts the Director’s discretion to provide a licence that more closely parallels the anticipated need for water over the life of a project. From the perspective of water conservation this is a downside and, without better documentation, it is not consistent with the purposes set out in section 2 of the *Water Act*.

[218] Based on the previous analysis the Board is satisfied that the water allocation is acceptable if adjusted to 600 m³/day or 219,000 m³ per year. The idea of reduction in the volume of water allocated to the Certificate Holder was discussed in questioning of the Director by the Board. Based on this analysis, the potential consequences to the Certificate Holder, for a subsequent smaller licence in year two, are outweighed by the increased protection of the water supply. Further, in the Board’s view the allocation of this amount of water is more in keeping with the purpose of the *Water Act* in section 2, the considerations that are required in sections 51 and 66 of the *Water Act*, and the recognition that fresh water is, particularly in the southern part of the Province including Red Deer, a scarce commodity that must be managed with exceptional caution and scrutiny. Subject to the recommended conditions of the Proposed Licence, including the recommended term and the recommended volume reduction, and in considering the Director’s ability under section 54 of the *Water Act* to decrease the allocation in certain circumstances and clause 5 of the Proposed Licence which reserves the Director’s right to reduce the water allocation to meet the demonstrated water needs of the project, the Board finds that the amended allocation is now appropriate.

[219] In reducing the allocation of water to 600 m³/day or 219,000 m³ per year, the Board understands that it may be necessary for the Certificate Holder to apply for a licence for the additional 150m³/day that it may require for its project. The Board believes that through the

exploration of other alternative water supplies, such as produced water, that the Certificate Holder will be able to obtain the additional water that it may require. In the event that the Certificate Holder can not locate an alternative water supply for the any additional water it may require, it is free to make application to the Director for additional fresh water. The only thing that it will have lost is its priority with respect to the additional smaller quantity of water and the work to process a further application.¹⁸⁹ In the Board's view, as stated above, these potential consequences to the Certificate Holder are outweighed by the additional protection of the fresh water supply.

L. Has the Director adequately considered the impact of this allocation on future water users, including the future needs of municipalities? (Issue 3(b))

[220] Based on the analysis in Issues 2(a) and 5(a) the Board is satisfied that the Director adequately considered the impact of this allocation on future water users, including the Appellant municipalities. In particular, as is noted above, the Board believes that the Appellant municipalities in the area will be adequately protected by the priority system for licencing that is included in the *Water Act*. Further, the Board's recommendations for the term and renewal of the Proposed Licence provide for an ongoing review of the allocation, which also provides additional protection to future water users.

M. Should the volumes of water be allocated in some staged manner? (Issue 3(c))

[221] The Board is of the view that this issue is fully addressed under Issue 3(a).

N. Has the Director adequately considered the potential impacts of the project on immediate neighbours to the project, being Mr. Oxtoby, Mr. Little, and Mr. Smith? (Issue 4(a))

[222] The Director's evidence is that he considered the potential impact of the project on the bedrock aquifer supplying neighbouring water wells and determined that there would be

¹⁸⁹ The Board anticipates that one of the concerns the Certificate Holder may have with respect to a further application that may chose to undertake is a further appeal process. In this regard, the Certificate Holder may wish to consider the principle of issue estoppel, which could be argued at that time.

no unreasonable impact on the basis that the water source is a surface water source not the bedrock or sandstone aquifer that supplies the water wells.¹⁹⁰ In addition, the Director considered whether the project might impact on Mr. Oxtoby's surface water registration. Mr. Oxtoby is the closest neighbouring Appellant and the only one with a surface water registration. The Director determined that given the distance to Mr. Oxtoby's site (800 metres minimum) and the high hydraulic conductivity of the gravel, there would be no unreasonable impact on the neighbouring Appellants.¹⁹¹ On the evidence before us, we believe the Director is correct.

[223] The information the Director considered when arriving at these conclusions was the *Hydrogeological Investigation to Support a Surface Water Diversion under the Water Act for the Proposed Tindastoll Waterflood*¹⁹² (the "Hydrogeological Study") prepared by Waterline Resources Inc., and a review of the Hydrogeological Study and advice provided by Mr. Timothy Chau, a ground water engineer with the Red Deer Regional Office of Alberta Environment.¹⁹³ In his memorandum, Mr. Chau concurred with the finding of the Hydrogeological Study that there is a hydraulic connection between the river and the source water well on the basis that:

- “• ... the proposed water source well (WW1) was completed in coarse-grained sand and gravel which is likely a continuation of the sediment deposit underlying the river.
- ...the report illustrated similarity in water quality parameter values between WW1 and the river, collected during the period of aquifer testing ... there were differences in the values of water quality parameters between WW1 and local water wells located at distances greater than 1 km from the Red Deer River.
- Under non pumping condition, the natural direction of the ground water flow was from the river towards WW1.
- Pumping from WW1 induced lateral inflow from the river to the well through the sand and gravel deposits. The water level observed in WW1 showed fast stabilization during the pumping period of 900m³/day ... During the aquifer testing period, some correction existed between fluctuations of the river level and the recovery water level in WW1.”¹⁹⁴

¹⁹⁰ Affidavit of David Helmer, page 9, Issue 4(a).

¹⁹¹ Affidavit of David Helmer, page 9, Issue 4(a).

¹⁹² Director's Record, page 50, *Hydrogeological Investigation to Support a Surface Water Diversion under the Water Act for the Proposed Tindastoll Waterflood*.

¹⁹³ Director's Record, page 50, *Hydrogeological Investigation to Support a Surface Water Diversion under the Water Act for the Proposed Tindastoll Waterflood*.

¹⁹⁴ Director's Record, page 261, Memo from Tim Chau, dated June 24, 2003.

[224] In addressing the surface water concerns of Mr. Oxtoby and Mr. Smith, Mr. Chau further stated that:

“The spatial extent of the pumping influence of the production well, as illustrated in the technical report by the steady state cone of depression extending from the pumping well towards the river, was confined to the gravel deposit in the southeast portion of SW 4-36-1-W5M. It is therefore unlikely that water supply sources of neighbours who had submitted statements of concern for this project ... would be affected by the proposed water diversion as their water sources are neither within the zone of pumping influence of the production well (WW1) nor dependent on the flow system within the gravel deposit.”¹⁹⁵

[225] Based on the testing and analysis, and the evidence presented to the Board, we are satisfied that the Director adequately considered the impact of the proposed project on the immediate neighbours to the project and was correct in determining that there would be no significant impact on them. The Board accepts the evidence of the witnesses on all sides that there may be a connection between their ground water sources and the proposed diversion. However, the Board believes that such a connection, as it relates to the direct influence of WW1 well, is small and unlikely to cause an adverse effect on either Mr. Oxtoby, Mr. Little and Mr. Smith.

O. Was the testing undertaken sufficient and adequate to predict the long term impacts of the project on immediate neighbours? (Issue 4(b))

[226] The Board accepts the evidence provided by Mr. Chau that the test of 5 days pumping followed by 6 days of monitoring at three sites constitutes an appropriate long-duration test.¹⁹⁶ The Board noted that this testing took place during the winter months and the drawdown area around the water well will likely become smaller for non-winter months when the river level is hopefully higher.¹⁹⁷ On this basis, the Board is satisfied that the results of the testing is sufficient to reasonably predict the long term impacts of the project on immediate neighbours.

¹⁹⁵ Affidavit of Timothy T.S. Chau, Exhibit A, page 2.

¹⁹⁶ Affidavit of Timothy T.S. Chau, Exhibit A, page 2.

¹⁹⁷ Affidavit of Brad Graham, page 3., paragraph 18.

P. Do the immediate neighbours to the project have adequate protection in the event there is an impact on them? (Issue 4(c))

[227] Mr. Oxtoby, Mr. Little and Mr. Smith all have water allocations through registrations that are either approved or in progress with priority numbers senior to the Certificate Holder, thus they are protected by the “first in time, first in right principle” reflected in the *Water Act*.¹⁹⁸ In addition to the protective mechanisms provided by the *Water Act*, there are also several conditions in the Proposed Licence that will serve to protect these Appellants’ interests. As discussed previously, clause 6 of the Proposed Licence permits the Director to amend the licence if there is unreasonable interference due to the operation of the project on other water users that can not otherwise be satisfactorily remedied and clauses 9 and 10 work together to set out a mechanism for responding to complaints. The Board’s recommendations for amendments to clause 6 and clause 10 serve to further protect existing users, and the recommendations for the term and renewal of the Proposed Licence provide for an on-going review of the water allocation and any discernible impacts on the water supplies of immediate neighbours will be a consideration for the Director at the time of a renewal application.

Q. Has the Director properly taken into account all the applicable policies of the Government of Alberta? (Issue 5(a))

[228] Sections 51(4)(a) and 66(3)(a) of the *Water Act* mandate that the Director evaluate the matters and factors that must be considered in issuing a licence as specified in an applicable approved water management plan. The SSRBWMP Phase One was considered by the Director and found not to apply to this application.¹⁹⁹ Phase One established a system for the transfer of existing water allocations, which also includes the transfer of priority, from an existing licence holder to another user and provided for an interim closure of the Old Man’s southern tributaries (St. Mary, Belly and Waterton Rivers) to new allocations. The Board concurs with the Director’s finding that Phase One of the SSRBWM does not apply to this application.

[229] The Director also considered and applied the policy related to the Acceptance and Acknowledgment of the Statements of Concerns EPS-99-PP3, February 2000.²⁰⁰ There was no

¹⁹⁸ Affidavit of David Helmer, Exhibit A, page 4.

¹⁹⁹ Affidavit of David Helmer, Exhibit A, page 1, Issue 1(a.)

²⁰⁰ Affidavit of David Helmer, Exhibit A, page 12, Issue 5(a).

evidence presented to the Board that this policy was ignored and on the face of the Director's Record the Board is satisfied that the policy was complied with, to the best of the Director's ability. The Director's consideration of the Ground Water Policy and the Board's finding in that regard has already been discussed.

[230] Some Appellants have argued that the Director failed to consider Water For Life.²⁰¹ Water for Life sets out three key goals for the provincial water strategy: 1) safe secure drinking supply, 2) healthy aquatic ecosystems, and 3) reliable, quality water supplies for a sustainable economy. To meet these goals, the province has established specific outcomes. Two related medium term outcomes (2007/08 to 2009/10) are to have water management objectives and priorities directed to sustaining aquatic ecosystems,²⁰² and to support sustainable economic development established through watershed plans.²⁰³ A further medium term goal is to have all sectors demonstrating best management practices and improving efficiency and productivity associated with water use.²⁰⁴

[231] Water for Life is not an approved water management plan or guideline as contemplated by the *Water Act*, thus there is no requirement for the Director to consider Water for Life. However, it is the Board's view that Water for Life arises from the *Water Act* and in acting in accordance with the purpose of the *Water Act* the Director is also acting consistently with Water for Life.

R. Do the Preliminary Certificate and Proposed Licence adequately allow for any changes regarding the policy direction on oilfield injection? (Issue 5(b)).

[232] The term of the Proposed Licence recommended by the Board is intended to allow for the incorporation of the policy direction provided by the SSRBWMP Phase 2 and further guidance on the use of surface water for oilfield injection that may result from the recommendations of the Advisory Committee. The renewal provisions recommend by the Board also permit on going review of this issue. Finally, clause 7 of the Proposed Licence reserves the right for the Director to establish water conservation objectives upon 12 months written notice to

²⁰¹ Affidavit of Jim Romane, Schedule A, page 1, paragraph F(iii).

²⁰² Water for Life, page 7.

²⁰³ Water for Life, page 8.

²⁰⁴ Water for Life.

the licensee. As a result, the Board is satisfied that the Certificate and Proposed Licence adequately allow for any changes regarding the policy direction on oilfield injection.

S. Has the Director adequately taken into account the sustainability of the Red Deer River Basin and the South Saskatchewan River Basin? (Issue 5(c))

[233] Justification for Mr. Figliuzzi's conclusion that the diversion would not have an impact on the Alberta's obligations to downstream provinces is set out in his rebuttal affidavit.²⁰⁵ Based on the South Saskatchewan River Sub-basin Contributions to International and Interprovincial Water-Sharing Agreements Report²⁰⁶ and 1996-2001 Update²⁰⁷, over the past 27 years Alberta has, on average, passed 75 percent of the apportionable flow to Saskatchewan rather than the 50 percent required under the Apportionment Agreement.²⁰⁸ The Red Deer River Basin passes a relatively constant 98.4 percent of the mean annual natural flow to Saskatchewan.²⁰⁹ For the period 1975 to 2001, there were 18 years when no flow was required from the Red Deer River to meet apportionment and only once (52.6 percent in 1988) was the Red Deer River required to contribute more than 50 percent of its natural flow to compensate for over consumption in the Bow and/or Oldman basins.²¹⁰ This analysis, combined with the Board's recommendations for the term and renewal of the Proposed Licence, satisfies the Board that the sustainability of the Red Deer River Basin and the South Saskatchewan River Basin have been adequately taken into account.

VI. CONCLUSIONS

[234] The primary concern that has been expressed by all of the Appellants is the common view that fresh water is a scarce resource and it should be rarely used, if at all, for the purpose of oilfield injection. The fundamental basis of their objection is that once fresh water is injected into an oil-bearing formation, it is gone forever. In supporting these objections, the

²⁰⁵ Rebuttal Affidavit of Sal Figliuzzi, page 3.

²⁰⁶ Rebuttal Affidavit of Sal Figliuzzi, Exhibit A.

²⁰⁷ Rebuttal Affidavit of Sal Figliuzzi, Exhibit B.

²⁰⁸ Rebuttal Affidavit of Sal Figliuzzi, page 3, paragraph a.

²⁰⁹ Rebuttal Affidavit of Sal Figliuzzi, Exhibit B, page 19, paragraph 5.

²¹⁰ Rebuttal Affidavit of Sal Figliuzzi, Exhibit B, page 3, paragraph d.

Board highlights the importance of fresh water to all of us. Fresh water is essential for human existence: we need it to drink, we need it to grow our food, and we need it to live.

[235] The Board is also aware of the importance of the oil and gas industry to Alberta. It is a cornerstone of our economy, and the Board notes the work being undertaken by the oil and gas industry to reduce their use of fresh water. What the Board is required to do in addressing these appeals is balance the protection of our fresh water supplies with sustaining this essential element of our economy.

[236] With respect to the matter before us, the Board accepts the argument of the Appellants that when fresh water is injected into the ground as part of the oilfield injection process it is, for all practical purposes, lost from the hydrologic cycle for millions of years.²¹¹ Section 2 of the *Water Act* requires, in our opinion, that any use of water resulting in the loss of fresh water from the hydrologic cycle requires *much* greater scrutiny. This requirement for greater scrutiny is clearly evidenced by the work of the Minister's Advisory Committee established to examine "...practices that remove water from the hydrologic cycle, including oilfield injection." Further, in the Board's view, where fresh water is being used in this manner, the distinction between surface water and ground water is not helpful at all, because the overall effects on the environment are the same.

[237] Based on the oral and documentary evidence received in these appeals, the Board has concluded that the Certificate and Proposed Licence should be varied, and these variations are detailed below.

[238] The difficulty the Director faced in dealing with the application by the Certificate Holder, and in the Board's view he dealt with it as best as he could and is to be commended for it, was that there was no clear policy for him to follow and the policy he did have was not consistent with the *Water Act*. This is the Board's principle concern in these appeals: there is no clear policy that applies to the use of all fresh water for oilfield injection purposes. Although it is not necessary for the purposes of this decision, the Board encourages the Government, in the future, to provide direction through an oilfield injection policy that focuses on minimizing the use of fresh water for oilfield injection *regardless* of its source. The changes that the Board is

²¹¹ Transcript, February 23 to 25, 2004, at page 433, lines 1 to 8, Mr. Sal Figliuzzi stating that that it would take approximately one million years for fresh water injected in the oilfield injection process to return in the

recommending with respect to this Certificate and Proposed Licence, will hopefully allow the Director to take any such policy direction that is developed into account in future stages of the Certificate Holder's project.

[239] In response to the specific issues which it posed, the Board has reached the following conclusions:

1. Purpose

- a. What role does purpose for which the water will be used have with respect to the allocation of water under the *Water Act*?

[240] The purpose for which water is to be used is referred to repeatedly in the provisions of the *Water Act*. Therefore, the *Water Act* requires that the Director consider the purpose for which the water will be used in making licencing decisions; he would not be able to properly apply the provisions of the *Water Act* without considering purpose of use.

- b. Is the use of water for oilfield injection a valid reason to refuse to grant an allocation of water under the *Water Act*?

[241] The use of fresh water for oilfield injection is specifically identified in the policies that are established pursuant to the *Water Act*, and is not otherwise prohibited. Therefore, the use of fresh water for oilfield injection *is not in and of itself* a valid reason to refuse to grant an allocation of water under the *Water Act*. The use of water for any purpose is not in and of itself valid grounds for the Director, of his own accord, to refuse to grant a preliminary certificate or licence. However, the *Water Act* requires that the impacts of the use of fresh water for this specific purpose is one of the factors that the Director must consider in making his decision whether to grant a preliminary certificate or licence.

- c. Has the Director adequately balanced the economic benefits and environmental impacts of this project?

[242] The Board is of the view that the overall economic analysis and appropriateness of the oilfield injection project is best left to the Certificate Holder, but this should not be construed to mean the Director is not obligated to consider whether alternatives to the use of

fresh water are available. Section 2 of the *Water Act* requires the Director to take alternate sources of water into consideration.

- d. Has the Director adequately considered alternatives to the use of water for this project, including the economics of those alternatives?

[243] The Board accepts that the Source Water Options Report filed by the Certificate Holder considered the available alternatives, but more than that is necessary. With respect to the CO₂ option, based on the evidence the Board heard at the Hearing, no further detail is required. It is simply not a viable option for the Certificate Holder in this instance. However, in the Board's view, given the importance of protecting our fresh water supplies, before fresh water should be used for a purpose that results in it being effectively lost from the hydrologic cycle, a more detailed alternatives analysis should be conducted.

[244] The alternatives analysis should consider the technical, economic, and regulatory feasibility of alternatives to fresh water. Section 2 of the *Water Act* requires that an applicant for a use of fresh water that results in it effectively being lost from the hydrologic cycle, prove to the Director, in writing and with sufficient documentation, the feasibility of the "next best" alternative. Only if there is no other feasible alternative should fresh water be considered.

[245] The analysis should also demonstrate that the fresh water will be used efficiently. A full analysis of efficient use would consider both the volume of water used and the results expected to be obtained. This approach should provide the applicant with the appropriate incentive to apply for the minimum amount of water necessary to accomplish the task, thus encouraging operators to combine water with other available fluids, recycle as much water as possible, and minimize waste by using the most efficient processes available. In an oilfield injection scenario, the measure of results obtained must reflect the tradeoff between fresh water used and oil recovered.²¹²

²¹² Some of the information that might be required by the Director to determine whether a use of fresh water is beneficial and otherwise consistent with the *Water Act* for these purposes includes:

- (a) the extra cost per barrel of recovered oil if the applicant is required to use brackish water in the region;
- (b) expected amount of oil to be recovered and its value;
- (c) the expected cost of fresh water versus the other use of other water resources;
- (d) an inventory of all wells, including fresh water wells, salt water wells, disposal wells and other wells within 3 km of the diversion point;

[246] In these appeals, based on all the information before the Board, including the alternatives analysis, the Board recommends that the Certificate and Proposed Licence be varied. We recommend that the volume of water allocated in the Proposed Licence be reduced to 600 m³/day, for a total allocation of 219,000 m³ annually. The reduction in the amount of water allocated in the Proposed Licence is consistent with evidence provided in the Hearing that 150 m³/day of produced water is possibly available elsewhere and that 750 m³/day (the lower end of their peak range) would not be needed in the first year of the project (the initial term of the Proposed Licence is for one year). In the Board's view, the use of fresh water should be the last option considered, and here, based on the information that we have, there may have been other, better options.

[247] We recommend the Certificate be varied to add a condition that requires the Certificate Holder to utilize an alternative water source, such as produced water, where at all possible. The Certificate should be amended to require the Certificate Holder, as a condition of obtaining the Proposed Licence, provide the Director with a report detailing a more complete investigation of alternate water sources. If this report demonstrates that an alternate source of water is available, then the Certificate Holder should be encouraged and required to use water from this alternate source. If the report indicates the alternate water source can provide 300 m³/day or less, then the Certificate Holder should be allowed to use this additional water without any reduction in the amount of water granted under the Proposed Licence. If the report indicates that the alternate water source can provide more than 300 m³/day, then for every 1 m³/day of water that this alternate source can provide in excess of 300 m³/day, the amount of water allocated under the Proposed Licence should be reduced by 1 m³/day.

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- (e) an inventory of all other operators within the general area, in approximately a 20 km radius that may provide an alternative source of water, including salt water, brackish water, or produced water;
 - (f) any applicable information on recycling or reusing water;
 - (g) any geological data to provide an indication of the potential availability of brackish water;
 - (h) an economic and technical review including: the total cost of the project and the value of enhanced oil recovery that might be gained, more details on the comparisons on the availability of brackish water, produced water, and fresh water;
 - (i) a detailed explanation as to why brackish water or produced water can not be used;
 - (j) a review of other available technologies and their feasibility, such as carbon dioxide or nitrogen;
 - (k) any other information the Director may require.

[248] In the Board's view, this approach is consistent with section 2 of the *Water Act* and is consistent with a full consideration of the provisions detailed in sections 51 and 66 of the *Water Act*. In the Board's view, this approach also properly recognizes the value and importance of wisely using the limited amount of surface water that is available in this constrained area of the Province.

- e. Has the Director adequately considered the removal of the allocated water from the hydrological cycle?

[249] As the Board has stated, in its view, it is necessary for the Director to consider the purposes for which water is to be used. In this regard, it is necessary for the Director to acknowledge that the use of water for the purpose of oilfield injection removes it from the hydrologic cycle. This having been said, the Board's recommendation to reduce the amount of water allocated under the Proposed Licence to 600 m³/day or less if another alternate source of water is found, adequately addresses this concern.

2. Protection

- a. Does the Preliminary Certificate and Proposed Licence provide adequate protection for: (1) other water users, (2) recreational users, (3) fish and wildlife, and (4) the aquatic environment, including instream flow needs?

[250] With respect to the adequacy of the protection provided by the Certificate and Proposed Licence as varied, the Board is satisfied the principle of prior appropriation of first in time, first in right reflected in the priority system established under the *Water Act*, and the related remedial and enforcement measures included in the *Water Act*, provide adequate protection for existing users of water from the Red Deer River. Specifically for the Appellant municipalities, the Board notes that the Water Services Commission, the City of Red Deer, and the North Water Users Group, whose interests were presented to the Board by the City of Red Deer, the Water Services Commission, and a number of the Intervenors, all have senior licences or pending applications before the Director that have priority over the Certificate Holder sufficient to provide for these needs for the next 50 years, including forecasted additional growth.

[251] Further, based on evidence from Mr. Trevor Rhodes, a fisheries biologist with Alberta Sustainable Development, the Board is satisfied that the Director adequately considered the needs of recreational users and fish and wildlife. However, the Board is aware that water

shortages have occurred in the last number of years with 2001 being the lowest flow year for the Red Deer River in 27 years. As a result, we believe an additional safety margin of 10 percent should be applied such that the clause setting out the required minimum residual flow level should be amended from 4.25 m³/second to 4.68 m³/second. The Board believes that this should provide additional protection to other water users in times of shortage, as well as providing additional protection to recreational users, fish and wildlife, and the aquatic environment.

- b. Are the terms and conditions of the Preliminary Certificate and Proposed Licence adequate with respect to: (1) monitoring, (2) reporting, (3) minimum flow rates, and (4) maximum pump rates?

[252] The Board does not find that further monitoring, of the type suggested by the Appellants, is required. However, the Board does recommend that clause 6 of the Proposed Licence be amended to provide that the “unreasonable interference” and “satisfactorily remedied” are both to be assessed by the Director. Clause 10 of the Proposed Licence should be strengthened to require the Certificate Holder to notify the Director and provide the Director with a copy of any complaint that is received directly by the Certificate Holder. Further, clause 10 should require that within a short period of time to be set by the Director, the Certificate Holder provide a plan for the investigation of any complaint and that there be a disposition of the complaint to the satisfaction of the Director within a time frame established by the Director. Finally, the clause should be amended to permit the Director, when the Director is of the opinion that it is warranted to do so to protect existing users, to shut in the diversion until the complaint is investigated and resolved. The Board is of the view these amendments will strengthen the Certificate and Proposed Licence to provide additional protection to the other water users.

[253] The Board also has concerns about the completeness of the Certificate. It does not appear to clearly spell out in proper detail, the terms and conditions that must be met for the Certificate Holder to obtain the Proposed Licence. As a result, the Board recommends that the terms and conditions of the Certificate be varied to include a requirement that the works necessary to allow the Certificate Holder to take its allocation be constructed before the Proposed Licence is issued. Further, to take into account the time that it will take for the Certificate Holder to meet the new terms and conditions of the Certificated, the Board will also be recommending to the Minister that the expiry date of the Certificate be extended from July 23, 2004 to July 23, 2005.

- c. Is the term of the Proposed Licence appropriate?

[254] The Board is of the view that the one year term specified by the Director is not authorized by the *Water Act*, but we agree with his concept of a staged licence. Under the authority of section 100(1)(c) of EPEA and section 12(1) of the Regulation, the Board agrees that the term of the Proposed Licence should be one year. Therefore, the Board recommends that the Minister order that the initial term of the Proposed Licence is to be for one year.

- d. Are the renewal mechanisms relating to the Proposed Licence appropriate?

[255] In the Board's view, the subsequent terms of the Proposed Licence should be established in accordance with the policy established either under Phase 2 of the SSRBWMP or a revised oilfield injection policy in place at the time, but in any event, also based upon an alternative assessment filed at the time of the application for renewal. Therefore, the Board recommends that the Minister order that if either Phase 2 of the SSRBWMP or an applicable policy or guideline has not been issued by the date of renewal, (such that the Director has no further guidance on the appropriate term for such a licence) that the Director is to renew the licence for a second one year term. Finally, if no applicable plan, guideline, or policy is in place after the second one year term, the Board recommends that the Minister order that any subsequent renewal of the licence not exceed a term of three years until such time as an applicable plan, guideline, or policy is available, recognizing that the alternatives assessment for any application will always be required by section 2 of the *Water Act*, based on the facts of each case.

3. Volume

- a. Is the volume of water allocated appropriate, including taking into account the proposed length of the project and the availability of water in the Red Deer River?

[256] As we have indicated, the Board is satisfied that the water allocation is acceptable if reduced to 600 m³/day or 219,000 m³ per year. In reducing the allocation of water to 600 m³/day or 219,000 m³ per year, the Board is not precluding that it may be necessary for the Certificate Holder to apply for a licence for the additional 150 m³/day that it may require for its project. The Board is of the view that any subsequent licence should only be considered if the

Certificate Holder is able to convince the Director, through a detailed alternatives analysis, that there are no other viable alternatives to the use of fresh water.

- b. Has the Director adequately considered the impact of this allocation on future water users, including the future needs of municipalities?

[257] The Board has addressed this question in its discussion of Issues 2(a) and 5(a).

- c. Should the volumes of water be allocated in some staged manner?

[258] The Board has addressed this question in its discussion of Issue 3(a).

4. Immediate Neighbours

- a. Has the Director adequately considered the potential impacts of the project on the immediate neighbours to the project, being Mr. Oxtoby, Mr. Little, and Mr. Smith?

[259] Based on the testing and analysis, and the evidence presented to the Board at the Hearing, we are satisfied that the Director adequately considered the impact of the proposed project on the immediate neighbours to the project and was correct in determining that there would be no unreasonable impact on them. The Board accepts the evidence of the witnesses on all sides that there may be a connection between their ground water sources and the proposed diversion. However, the Board believes that such a connection, as it relates to the direct influence of the Well, is unlikely to cause an adverse effect on Mr. Oxtoby, Mr. Little or Mr. Smith.

- b. Was the testing undertaken sufficient and adequate to predict the long-term impacts of the project on the immediate neighbours?

[260] The Board is satisfied that the testing results are adequate to reasonably predict the long term impacts of the project on the immediate neighbours.

- c. Do the immediate neighbours to the project have adequate protection in the event that there is an impact on them?

[261] The Board is of the view that there is adequate protection in place for the immediate neighbours in the event that there is an impact on them.

5. Policy Considerations

- a. Has the Director properly taken into account all the applicable policies of the Government of Alberta?

[262] Subject to the discussions included in this Report and Recommendations regarding the Guideline and the Ground Water Policy, the Board concludes that the Director has, to the best of his ability, taken into account the applicable policies of the Government of Alberta.

- b. Do the Preliminary Certificate and Proposed Licence adequately allow for any changes regarding the policy directions on oilfield injection?

[263] Taking into account the various recommendations that the Board has made, the Board is satisfied that the Certificate and Proposed Licence adequately allow for any changes with respect to the policy on oilfield injection.

- c. Has the Director adequately taken into account the sustainability of the Red Deer River Basin and the South Saskatchewan River Basin?

[264] Taking into account the Board's recommendations for the term and renewal of the Proposed Licence, the Board is satisfied that the sustainability of the Red Deer River Basin and the South Saskatchewan River Basin have been adequately taken into account.

VII. RECOMMENDATIONS

A. General Recommendations

[265] The Board encourages the Government to eventually develop a single policy that deals with the use fresh water for oilfield injection regardless of its source.

[266] Given the importance of our fresh water supplies and taking into account the sustainable development principles included in section 2 of the *Water Act*, before fresh water should be used for a purpose that results in it effectively being lost from the hydrologic cycle, an alternatives analysis to find other water should be conducted. The alternatives analysis should examine the technical, economic, and regulatory feasibility of alternatives to fresh water. The analysis should also demonstrate that the required fresh water will be used efficiently and only as the last option considered.

B. Specific Recommendations

[267] The Certificate should be varied.

[268] The amount of water allocated in the Certificate and Proposed Licence should be reduced to 600 m³/day, for a total allocation of 219,000 m³ annually. The reduction is consistent with evidence provided by the Certificate Holder that 150 m³/day of produced water is possibly available elsewhere and with the amount of water that will be used in the first year of the project, having regard to the one year term of the Proposed Licence.

[269] To encourage the use of alternate water sources if possible, before the Proposed Licence is issued, the Certificate Holder should be required to provide the Director with a report detailing a more complete investigation of alternate water sources. If the report indicates that the viable alternate water source can provide 300 m³/day or less, then the Certificate Holder should be allowed to use this additional water without any reduction in the amount of water granted under the Proposed Licence. If the report indicates that the viable alternate water source can provide more than 300 m³/day, then for every 1 m³/day of water that this alternate source can provide in excess of 300 m³/day, the amount of water allocated under the Proposed Licence should be reduced by 1 m³/day.

[270] The Board believes the Director has adequately considered the effects on other users, including recreational users, and on fish and wildlife. However, as water shortages have occurred in the last number of years, and there have been low flows in the Red Deer River, an additional safety margin of 10 percent should be added to the minimum residual flow level, making it 4.68 m³/second.

[271] To provide additional protection to other water users, clause 6 of the Proposed Licence should be varied to provide that both “unreasonable interference” and “satisfactorily remedied” are to be assessed by the Director. Clause 10 of the Proposed Licence should be strengthened to require the Certificate Holder to provide the Director with a copy of any complaints that are received directly by the Certificate Holder. Clause 10 should also allow the Director to prescribe timelines in which the Certificate Holder is to provide a plan for investigating and resolving any complaint and complaints should be resolved to the satisfaction of the Director. Finally, clause 10 should also be varied to permit the Director, when the

Director is of the opinion that it is necessary to protect existing users, to shut in the Well until a complaint is investigated and resolved.

[272] The Certificate does not provide clear terms and conditions that must be met by the Certificate Holder to obtain the Proposed Licence. The Certificate should be varied to require that the works necessary to allow the Certificate Holder to take its allocation be constructed prior to the Proposed Licence being issued. Further, the expiry date of the Certificate should be amended from July 23, 2004 to July 23, 2005.

[273] Under the authority of section 100(1)(c) of EPEA and section 12(1) of the Regulation, the Board recommends that the Minister order that the initial term of the Proposed Licence be one year. The Board also recommends that the Minister order that the second term of the Proposed Licence should be in accordance with any applicable plan, guideline, policy or change in the regulations and if no guidance is available, the second term should also be for one year. Finally, if no applicable plan, guideline, policy or change in the regulations is in place after the second one year term, the Board recommends that the Minister order that any subsequent renewal of the Proposed Licence not exceed a term of three years, until such time as additional guidance is available. The Board recommends that the Minister order that any renewal of the Proposed Licence requires that an alternatives assessment be conducted and provided to the Director.

[274] Attached for the Minister's consideration is a draft Ministerial Order implementing these recommendations.

[275] Finally, with respect to sections 100 and 103 of EPEA, the Board recommends that copies of this Report and Recommendations and any decision by the Minister be sent to the following parties:

1. Mr. Jim Romane on behalf of the Mountain View Regional Water Services Commission;
2. Mr. Richard Secord, Ackroyd, Piasta, Roth & Day LLP on behalf of Mr. Gerald Oxtoby, Mr. Terry Little and Mr. Kelly Smith;
3. Mr. Nick P. Riebeck, Chapman Riebeck on behalf of the City of Red Deer, represented by Mr. Nick P. Riebeck;
4. Mr. Alan S. Hollingworth, Q.C. and Ms. Nadine Berge, Gowling Lafleur Henderson LLP on behalf of Capstone Energy Ltd.;

5. Mr. William McDonald and Ms. Charlene Graham, Alberta Justice on behalf of Mr. David Helmer, Director, Central Region, Regional Services, Alberta Environment;
6. Mr. Mike Gallie;
7. Mr. Don Bester on behalf of the Butte Action Committee;
8. Mr. Jim Scott on behalf of the Red Deer County Ratepayer Association;
9. Ms. Dorene Rew;
10. Mr. Don Hepburn on behalf of the Council of Canadians (Red Deer Chapter);
11. Ms. Wendy Martindale on behalf of the Normandeau Cultural and Natural History Society; and
12. Mr. Don Andersen on behalf of the Trout Unlimited.

VIII. COSTS

[276] Before the close of the Hearing, the Board received notice from the Appellants that they may wish to make an application for costs. The Board requests that any applications for costs be provided to the Board within two weeks of the date of the Minister's Order with respect to this Report and Recommendations. The Board will then provide the Parties with an opportunity to respond to any such applications before making its decision.

Dated on April 26, 2004, at Edmonton, Alberta.

- original signed by -

Dr. William A. Tilleman
Chair

- original signed by -

Dr. Frederick C. Fisher
Vice Chair

- original signed by -

Al Schulz
Board Member

IX. DRAFT MINISTERIAL ORDER

Ministerial Order

/2004

Environmental Protection and Enhancement Act

R.S.A. 2000, c. E-12;

Water Act

R.S.A. 2000, c. W-3; and

Water Ministerial Regulation

A.R. 205/98.

**Order Respecting Environmental Appeals Board
Appeal Nos. 03-116, 118, 119, 120, and 121**

I, Dr. Lorne Taylor, Minister of Environment, pursuant to section 100 of the *Environmental Protection and Enhancement Act*, section 14 of the *Water Act* and section 12 of the *Water (Ministerial) Regulation* make the order in the attached Appendix, being an Order Respecting Environmental Appeals Board Appeal Nos. 03-116, 118, 119, 120, and 121.

Dated at the City of Edmonton, in the Province of Alberta this ____ day of _____, 2004.

Honourable Dr. Lorne Taylor
Minister of Environment

Draft Appendix

With respect to the decision of Mr. David Helmer, Director, Central Region, Regional Services, Alberta Environment (the "Director"), to issue Preliminary Certificate No. 00198509-00-00 (the "Preliminary Certificate") dated July 23, 2003, under the *Water Act*, to Capstone Energy Ltd. (the Preliminary Certificate Holder), I, Dr. Lorne Taylor, Minister of Environment, order that:

1. The decision of the Director to issue the Preliminary Certificate is confirmed, subject to the following variations.
2. For the purposes of interpreting this Ministerial Order the Preliminary Certificate will be referred to in two parts: the "Certificate" which is composed of the cover page and the section entitled "GENERAL" having clauses numbered 1 to 3; and the "Proposed Licence" which is composed of the sections entitled "DIVERSION OF WATER, COMPLAINT INVESTIGATION, MONITORING AND REPORTING, AND GENERAL" having clauses numbered 1 to 17.
3. The Certificate is varied by deleting on the cover page the phrase "will receive a licence to divert 328,500* cubic metres of water annually" and replacing it with "will receive a licence to divert 219,000* cubic metres of water annually".
4. The expiry date of the Certificate is varied by deleting on the cover page the phrase "2004 07 23" and replacing it with "2005 07 23".
5. The Certificate is varied by deleting in clause 1 the phrase:

**"MAXIMUM PUMPING RATE
(cubic metres per day)
900"**

and replacing it with:

**"MAXIMUM PUMPING RATE
(cubic metres per day)
600"**

6. The Certificate is varied by adding immediately after clause 1 the following:
 - 1.1 Prior to the issuance of the licence, the preliminary certificate holder shall submit to the Director a written report, satisfactory to the Director, detailing a complete investigation of alternate water sources and providing sufficient documentation to prove to the Director the feasibility of the next best alternative to the use of water allocated under this licence.

1.2 If the report required pursuant to clause 1.1 indicates, in the opinion of the Director, that there is a suitable alternate water source available that can provide the preliminary certificate holder with more than 300 cubic metres per day of water, then the amount of water allocated in a licence if it is granted will be reduced by the amount of water from the alternate water source that is available in excess of 300 cubic metres per day. This provision does not limit the Director's ability to make any other reductions in the amount of water allocated in the licence that he may be authorized to make under the *Water Act*.

1.3 The preliminary certificate holder shall, prior to the issuance of a licence, complete the construction of all works necessary, in the opinion of the Director, to allow the preliminary certificate holder to withdraw its allocated water."

7. The Proposed Licence is varied in clause 1 by deleting the phrase:

“MAXIMUM PUMPING RATE

(cubic metres per day)

900”

and replacing it as follows:

“MAXIMUM PUMPING RATE

(cubic metres per day)

600”

8. The Proposed Licence is varied in clause 3 by deleting the phrase “the water diversion is equal or exceeds 4.25 cubic metres per second (150 cubic feet per second)” and replacing it with “the water diversion is equal or exceeds 4.68 cubic metres per second (165 cubic feet per second)”.
9. The Proposed Licence is varied in clause 6 by deleting the phrase “information indicating unreasonable interference” and replacing it with “information that in the opinion of the Director indicates that there may be unreasonable interference”.
10. The Proposed Licence is varied in clause 6 by deleting the phrase “which cannot be satisfactorily remedied” and replacing it with “which in the opinion of the Director can not be satisfactorily remedied”.
11. The Proposed Licence is varied by adding immediately after clause 10(2) the following:

“(3) The licensee shall provide the Director with a copy of any complaint, regarding alleged interference, received directly by the licensee within 5 calendar days of receiving the complaint.

(4) The licensee shall provide the Director with a written plan for investigating and resolving any complaint regarding alleged interference within a time specified by the Director.

(5) If order to do so by the Director, the licensee shall suspend the diversion of water under this licence until any complaint regarding alleged interference is investigated and resolved.

(6) The licensee shall resolve all complaints of alleged interference to the satisfaction of the Director.”

12. The Proposed Licence is varied by adding immediately after clause 17 the following:

“18. Any application for the renewal of this licence shall be accompanied by a written report, satisfactory to the Director, detailing a complete investigation of alternate water sources and providing sufficient documentation to prove to the Director the feasibility of the next best alternative to the use of water allocated under this licence.”

I, Dr. Lorne Taylor, Minister of Environment, for the purposes of carrying out this decision, make the further order that:

1. Where, following the submission of a satisfactory certificate of completion and upon compliance with the conditions of the Preliminary Certificate, the Director grants the Preliminary Certificate Holder a licence, the term of the licence shall be for one year.
2. If the Director grants a renewal of the licence issued pursuant to this Preliminary Certificate, subject to any applicable plan, guideline, policy or amendment to the regulations under the *Water Act*, then the term of the first renewal of the licence shall also be for one year. If the Director grants any further renewals of the licence issued pursuant to this Preliminary Certificate, subject to any applicable plan, guideline, policy or amendment to the regulations under the *Water Act*, then the term of any further renewals should not exceed three years.



ALBERTA ENVIRONMENT

Office of the Minister

Ministerial Order

07/2004

Environmental Protection and Enhancement Act

R.S.A. 2000, c. E-12;

Water Act

R.S.A. 2000, c. W-3; and

Water Ministerial Regulation

A.R. 205/98.

**Order Respecting Environmental Appeals Board
Appeal Nos. 03-116, 118, 119, 120, and 121**

I, Dr. Lorne Taylor, Minister of Environment, pursuant to section 100 of the *Environmental Protection and Enhancement Act*, section 14 of the *Water Act* and section 12 of the *Water (Ministerial) Regulation* make the order in the attached Appendix, being an Order Respecting Environmental Appeals Board Appeal Nos. 03-116, 118, 119, 120, and 121.

Dated at the City of Edmonton, in the Province of Alberta this 18 day of May, 2004.

- original signed -

Honourable Dr. Lorne Taylor
Minister of Environment

Appendix

1. The decision of the Director to issue the Preliminary Certificate is confirmed, subject to the following variations.
2. For the purposes of interpreting this Ministerial Order the Preliminary Certificate will be referred to in two parts: the "Certificate" which is composed of the cover page and the section entitled "GENERAL" having clauses numbered 1 to 3; and the "Proposed Licence" which is composed of the sections entitled "DIVERSION OF WATER, COMPLAINT INVESTIGATION, MONITORING AND REPORTING, AND GENERAL" having clauses numbered 1 to 17.
3. The Certificate is varied by deleting on the cover page the phrase "will receive a licence to divert 328,500* cubic metres of water annually" and replacing it with "will receive a licence to divert 219,000* cubic metres of water annually".
4. The expiry date of the Certificate is varied by deleting on the cover page the phrase "2004 07 23" and replacing it with "2005 07 23".
5. The Certificate is varied by deleting in clause 1 the phrase:

"MAXIMUM PUMPING RATE

(cubic metres per day)

900"

and replacing it with:

"MAXIMUM PUMPING RATE

(cubic metres per day)

600".

6. The Certificate is varied by adding immediately after clause 1 the following:
 - 1.1 Prior to the issuance of the licence, the preliminary certificate holder shall submit to the Director a written report, satisfactory to the Director, detailing a complete investigation of alternate water sources and providing sufficient documentation to prove to the Director the feasibility of the next best alternative to the use of water allocated under this licence.
 - 1.2 If the report required pursuant to clause 1.1 indicates, in the opinion of the Director, that there is a suitable alternate water source available that can provide the preliminary certificate holder with more than 300 cubic metres per day of water, then the amount of water allocated in a licence if it is granted will be reduced by the amount of water from the alternate water source that is available in excess of 300 cubic metres per day. This provision does not limit the Director's ability to make any other reductions in the amount of water allocated in the licence that he may be authorized to make under the *Water Act*.

1.3 The preliminary certificate holder shall, prior to the issuance of a licence, complete the construction of all works necessary, in the opinion of the Director, to allow the preliminary certificate holder to withdraw its allocated water.”

7. The Proposed Licence is varied in clause 1 by deleting the phrase:

**“MAXIMUM PUMPING RATE
(cubic metres per day)
900”**

and replacing it as follows:

**“MAXIMUM PUMPING RATE
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600”**

8. The Proposed Licence is varied in clause 3 by deleting the phrase “the water diversion is equal or exceeds 4.25 cubic metres per second (150 cubic feet per second)” and replacing it with “the water diversion is equal or exceeds 4.68 cubic metres per second (165 cubic feet per second)”.

9. The Proposed Licence is varied in clause 6 by deleting the phrase “information indicating unreasonable interference” and replacing it with “information that in the opinion of the Director indicates that there may be unreasonable interference”.

10. The Proposed Licence is varied in clause 6 by deleting the phrase “which cannot be satisfactorily remedied” and replacing it with “which in the opinion of the Director can not be satisfactorily remedied”.

11. The Proposed Licence is varied by adding immediately after clause 10(2) the following:

“(3) The licensee shall provide the Director with a copy of any complaint, regarding alleged interference, received directly by the licensee within 5 calendar days of receiving the complaint.

(4) The licensee shall provide the Director with a written plan for investigating and resolving any complaint regarding alleged interference within a time specified by the Director.

(5) If order to do so by the Director, the licensee shall suspend the diversion of water under this licence until any complaint regarding alleged interference is investigated and resolved.

(6) The licensee shall resolve all complaints of alleged interference to the satisfaction of the Director.”

12. The Proposed Licence is varied by adding immediately after clause 17 the following:

“18. Any application for the renewal of this licence shall be accompanied by a

written report, satisfactory to the Director, detailing a complete investigation of alternate water sources and providing sufficient documentation to prove to the Director the feasibility of the next best alternative to the use of water allocated under this licence.”

I, Dr. Lorne Taylor, Minister of Environment, for the purposes of carrying out this decision, make the further order that:

3. Where, following the submission of a satisfactory certificate of completion and upon compliance with the conditions of the Preliminary Certificate, the Director grants the Preliminary Certificate Holder a licence, the term of the licence shall be for one year.
4. If the Director grants a renewal of the licence issued pursuant to this Preliminary Certificate, subject to any applicable plan, guideline, policy or amendment to the regulations under the *Water Act*, then the term of the first renewal of the licence shall also be for one year. If the Director grants any further renewals of the licence issued pursuant to this Preliminary Certificate, subject to any applicable plan, guideline, policy or amendment to the regulations under the *Water Act*, then the term of any further renewals should not exceed three years.