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Government of British Columbia
Mary Polak
Minister of Environment
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RE: *A Water Sustainability Act for BC: Legislative Proposal Review*

This letter summarises Waterline Resources Inc's (Waterline) review comments for the document entitled: "*A Water Sustainability Act for British Columbia: Legislative Proposal of October 2013*". Waterline is a hydrogeology consulting firm operating in BC and strongly supports the modernization of the BC Water Act which we hope will provide structure and guidance to our industry. Many aspects of the proposed *Water Sustainability Act (WSA)* represent considerable improvement in the governance of water in the Province. In particular, the following proposed changes offer considerable improvement over the current *BC Water Act*:

- Regulation of groundwater use,
- Requirement of large users (surface and groundwater) to measure and report withdrawal rates,
- Required rather than voluntary submissions of well records, well pump installation and well maintenance logs, and
- Providing for a review period for most water licences.

In the interest of further improving water governance in BC, Waterline would like to put forth the following comments on the proposed *Water Sustainability Act for British Columbia*. The comments have been organised in three main sections:

- a section describing general comments on the proposal that affect both surface and groundwater,
- a section specific to the proposed groundwater legislation and on integrating groundwater into the existing licence framework, and
- a section on water pricing.

General Comments

In Waterline's opinion the proposed 30-year review period for new water licences is much too long to provide the check and balances needed in a rapidly changing province like BC. Many changes can occur over a 30 year period and we believe it does not allow much flexibility to adapt to the pace of development, technology changes, or understanding the effects of climate change. In addition, there will undoubtedly be some unforeseen complications that arise from

trying to fit groundwater users into the First in Time First in Right (FITFIR) system already in place for surface water. It will be difficult to manage these problems in a timely manner if the licences cannot be reviewed for 30 years. A five or ten year mandatory review period would be more effective in providing regulatory flexibility while still providing reasonable water right security to users. This review period is consistent with other Canadian and United States jurisdictions and the province of BC is not unique in this regard.

The review period for existing licences should also be reduced to a similar time frame, at which time each existing licensee should undergo a detailed review. The review should test whether the licence meets the current Water Act requirements which states that a license can be “.cancelled, in whole or in part, if the licensee fails to make beneficial use of the water under the licence for three consecutive years”. This should allow the regulator to decrease the diversion rates associated with existing licences to rates that are in line with the license holder’s actual use, current technology, and currently accepted water conservation practices.

The draft WSA proposes that only large water users (E.g. greater than 250 m³/day) will be required to measure, record and report actual water use. In Waterline’s opinion, the requirement to report should apply to all licensed uses as it is possible that the cumulative effect of multiple smaller users could actually be greater than a single large user. The approach taken in the draft WSA could also encourage larger users to reduce individual licenses to below the reporting threshold which is counter productive. In addition, the WSA proposal does not specify the data format for submission and if the data will become publically available. The data should be submitted in a specified electronic format so it can easily be compiled by regulatory staff and made available publically. It is of critical importance that the data is accessible to water/environmental professionals, municipalities, water managers, and the general public for use in making informed decisions regarding cumulative effects of water use, future allocations, water use planning, and for research purposes.

The WSA is proposing that “Oil and Gas” be defined as a separate “Water Use Purpose” and no longer be included in the “Industrial” category. Waterline assumes that this decision was made so that larger water users can be tracked and also reflects the fact that water governance in the oil and gas sector is influenced by other legislation such as the *Oil and Gas Activities Act* managed by the Oil and Gas Commission (OGC). If this is the rationale then why are other large industrial users, such as the Forestry sector, not also given a separate purpose in the WSA? The forest industry is a significant industrial water user in the Province of BC and influenced by other legislation such as the *Forest and Range Practices Act* managed by the Forest Practice Board. It appears that water use by the forest industry in BC is not being scrutinized to the same level as the oil and gas and mining industries (Ministry of Energy and Mines (MEM)). This appears, at least on the surface, to not be in the interest of fair and comprehensive water management across all industrial sectors. There may be other industry sectors where the same level of scrutiny may be warranted.

It should also be noted that water well logs designated under the Oil and Gas Activities Act (OGGA) and the Mining Act are currently not always being submitted to MOE for compilation

into the Wells Database. There appears to be some confusion and disconnect that occurs when multiple regulatory bodies in different sectors have different and sometimes conflicting reporting requirements. This provides great challenges for groundwater practitioners trying to assess the impacts of groundwater use in a particular region which may have various industrial users. It is of utmost importance that the OGC, MEM, MOE and other regulatory bodies develop a consistent framework which is geared toward maximum data recovery. Every data point counts if we are trying to move to a sustainable future in water resource management.

Groundwater

There is no equivalent definition for environmental flow needs (EFN) for groundwater resources. The EFN definition strictly applies to groundwater contributions to streamflow. What metric is going to be used to measure the environmental effects of diversion from aquifers that are not directly connect to streams, such as groundwater contributions to stagnant wetlands, ephemeral systems and vegetation, etc...?

In terms of standards of practice for licensed hydrogeology professionals in BC, the WSA proposal does not outline specific aquifer testing requirements, a cumulative effects analysis methodology, or monitoring and maintenance requirements for license approvals. The lack of consistent standards of practice with respect to groundwater investigations and monitoring potentially results in different levels of assessment by groundwater practitioners. Draft guidelines should be developed in advance of, or concurrent with, the WSA Legislative proposal as its contents is greatly affected by the final approval process selected. Our concern is that the approach taken in the draft WSA may cause further delays in the groundwater licensing process once the WSA is put into force.

There is a misconception in BC that groundwater and surface water resources are owned by individual landowners. Water resources belong to all BC residents and therefore everyone must participate in its management. Domestic users should be required, not simply encouraged, to provide information regarding their water wells for compilation in the BC Wells database. Currently we believe that only about 50-60% of the data in the BC Wells database represents actual active wells. Well tag ID's should be used at all times when sampling and reporting on wells, and well owner transfers should also be tracked as part of any land transfer filing so that up to date information is available. Having reliable data on the number and distribution of domestic water wells is invaluable for groundwater practitioners who rely on this information to assess water supply potential and sustainable yield of aquifers. It is very difficult, perhaps even impossible, to assess the potential impacts of new groundwater users (licensed or not) on existing users and develop realistic water management strategies in the absence of accurate well data.

Although we largely agree with the proposed licensing exemption for individual domestic users, we believe that a form of well registration should be made mandatory as it would serve as field verification of existing active wells that could be cross-referenced to the BC Wells Database.

This could be accomplished as part of the annual property assessment evaluation where the data could be electronically transferred into the BC Wells Database.

There is no justification given in the WSA proposal for why hot temperature geothermal wells and remediation wells are excluded from requiring a WSA license. In the interest of effective planning, Waterline believes that information on all groundwater extraction in the Province should reside in a single data repository. The BC Wells database and the WSA approvals database is the logical place for this data, therefore all groundwater extraction wells in BC should require a WSA authorisation in our opinion.

The proposed definition of saline water in the WSA Legislative Proposal causes some confusion. Page 36 of the WSA Legislative Proposal states: "It is proposed that saline water could be defined in the WSA as groundwater found under 600 metres below the ground surface that contains either:

- >10,000 mg/L total dissolved solids; or
- >4,000 mg/L total dissolved solids and contains amounts of hydrocarbons or hydrogen sulfide."

The definition of saline groundwater should be strictly based on water quality and not include a restriction on depth. How will the WSA define groundwater at greater depths than 600 m? Does it mean that anything deeper than 600 m is by default considered to be saline groundwater? Waterline is aware of groundwater situated at depths greater than 600 m exhibiting TDS values of less than 4000 mg/L with no hydrocarbon or H₂S constituents. Under the above definition this groundwater would be classified incorrectly as saline groundwater.

Water Pricing

Water is considered by many to be British Columbia's most valuable natural resource. Although an argument can be made for the commoditization of water in a system similar to other natural resources (mining, oil and gas, forestry) this raises a great deal of political, if not moral, debate. Nevertheless, water resource management requires funding and it is the responsibility of the users of the resources to help ensure its sustainable use. Therefore, in Waterline's opinion water pricing is fundamental to the legislative proposal and the WSA that will follow.

The current surface water application fees and annual water rental fees are well established in the existing framework and should be used and possibly expanded to properly fund water management initiatives. The fee structure should be expanded to include all water users. It has been suggested that domestic water users might be removed from the fee structure, except possibly in areas of chronic water scarcity. Waterline believes that this is a very short-sighted approach. Waiting until "chronic water scarcity" occurs to start collecting data is obviously too late as the opportunity to reverse the impact may be significantly reduced. The funding of on-going monitoring programs provides for an "early warning system" that allows for management of both water quality and quantity and helps to avoid catastrophic failures of the supply system. This is particularly important at this very uncertain time where predictions of climate change are

anticipated to have significant impacts on our water resources. The approach being recommended is exactly the opposite of what is required to develop effective Water Sustainability Plans for the Province and appears to contradict the intent of Water Act Modernization.

The legislative proposal document suggests that current water rate system does not recover the costs of administration. Water rates should therefore be increased to recover cost of water licence administration in addition to the following:

- The development of Water Sustainability Plans throughout the Province,
- Improved monitoring systems (E.g.: levels, flows, use, climate),
- Data management,
- Compliance monitoring, and
- Enforcement of regulations.

Closing Comments

Surface and groundwater are renewable resources but a balance must be struck between water needed to maintain healthy ecosystems and the demand for water by humans. Although the legislation proposal document touches on some aspects of water management, a more detailed framework is required for assessing water availability versus water demand as considerable gaps exist in the data. The objective in water management is to achieve "sustainability" of water resources. This is simply not possible in the absence of proper monitoring data to allow scientist to agree on a path forward.

The BC Water Act Modernization process appears to have focussed on public consultation and on the issue of water rights which has caused considerable delay in developing legislation. No matter who owns the rights to the water, sustainable management practices need to be implemented as water supply wells continue to be drilled and aquifers exploited as the demand for water continually rises.

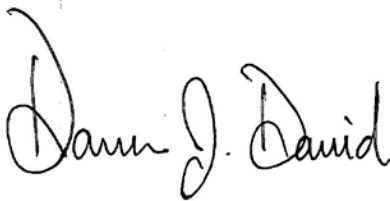
Approaches to water management are relatively well understood and not unique to the province of British Columbia. Developing guidelines that lead to improved knowledge of surface water and groundwater systems within each water region has been completed by other jurisdictions across Canada and is simply good practice. The absence of Provincial guidelines for managing groundwater, including; standards of practice for all water practitioners and mandatory monitoring and data submission requirements, risks the continuance of non-sustainable water management practices.

On-going land development and increasing water demand, combined with the potential effects of climate change will undoubtedly continue to place stress on surface water and groundwater resources in ways that we cannot predict or understand with current datasets. The cooperation of residents, water purveyors, drillers, water practitioners, corporations, municipal/provincial/federal regulatory officials is needed in order to move forward to a sustainable future.

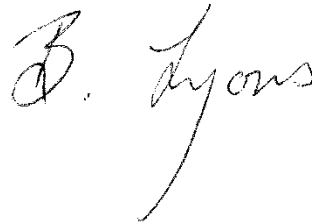
Waterline sincerely hopes that the proposed *Water Sustainability Act* is further refined through this public engagement process in order to protect BC's water resources. We also wish for the legislative process to move forward efficiently without any further delays and look forward to reviewing draft regulatory guidelines and policies when they come available.

Respectively Submitted by;

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