Ministry of Environment and Climate Change Strategy

Ministry of Forests, Lands, Natural Resource Operations and Rural Development

NAME OF POLICY:	Application of Water Allocation Notations to Water Authorizations
APPLICATION:	This policy applies to any water authorization applications where, due to lack of water availability or related concerns, a decision is made to refuse an authorization or to include conditions on the authorization.
ISSUANCE:	Executive Director, Water Protection and Sustainability Branch, Ministry of Environment and Climate Change Strategy, and Director, Water Management Branch, Ministry of Forests, Lands, Natural Resource Operations and Rural Development
IMPLEMENTATION:	FLNRORD and ENV.
LEGISLATIVE REFERENCES:	*Water Sustainability Act* (Ch. 15, S.B.C 2014) Water Sustainability Regulation – B.C. Reg 36/2016, 94/2016 Water Sustainability Fees, Rentals and Charges Tariff Regulation – B.C. Reg 37/2016, 43/2016 Groundwater Protection Regulation – B.C. Reg 39/2016
RELATED POLICIES:	Use of Water Allocation Plans, Considering Hydraulic Connection to Streams in Groundwater Allocation Decisions, and Environmental Flow Needs Policy.
RELATIONSHIP TO PREVIOUS POLICIES:	This amendment updates the existing policy.
POLICY AMENDMENT PROCESS:	To amend this policy a request must be made in writing to the Executive Director, Water Protection and Sustainability Branch, Ministry of Environment and Climate Change Strategy and the Director, Water Management Branch, Ministry of Forests, Lands, Natural Resource Operations and Rural Development.

Ted Zimmerman
Executive Director
Water Protection and Sustainability Branch
Ministry of Environment and Climate Change Strategy

Date January 19, 2022

Ted White
Director
Water Management Branch
Ministry of Forests, Lands, Natural Resource Operations and Rural Development

Date: January 19, 2022

APPROVED AMENDMENTS:		
Effective date	**Approval date**	**Description/Summary of Changes:**
April 30, 2018	April 30, 2018	Policy developed.
June 3, 2021	May 6, 2021	Policy updated to align with current template and formatted for public posting.
February 21, 2022	January 19, 2022	Policy updated to clarify regional specific use of the Possible Water Shortage notation.

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1. POLICY STATEMENT

Notations on streams and aquifers that indicate potential lack of water availability are helpful guidance for decision makers and potential applicants. This policy includes procedures for establishing water allocation notations for both stream water and groundwater. This policy provides criteria to guide the decision maker when making decisions on applications, including considering terms and conditions in an authorization where a notation exists. Procedures for documentation of determinations regarding notations and related review processes are also provided.

2. REASON FOR POLICY

Water allocation notations are a management tool that provides guidance with a view to improving efficiency and consistency in water allocation decisions by informing decision makers and applicants that a water source may not be able to support further authorizations. A framework for establishing and considering water allocation notations in authorizing use of water from streams has existed for over 50 years and a sizeable database of water allocation notations has been developed over this time. Current water allocation notations on streams are stored in the e-Licensing database and are accessible to the public through DataBC or iMapBC.

This policy has three main purposes:

1) To affirm that the same system of water allocation notations applies to streams and aquifers.
2) To update the guidance on application of the water allocation notations framework to encourage consistency in their consideration, documentation, review and follow up.
3) To provide guidance on how to consider establishment of water allocation notations for many aquifers in British Columbia that exist in hydraulic connection with streams with existing water allocation notations.

3. DEFINITIONS

Relevant terms defined in section 1 WSA [*Definitions*]: **applicant, aquatic ecosystem**, **aquifer, authorization, decision maker, environmental flow needs, groundwater, recorded water, stream, unrecorded water, well**.

Relevant terms defined in section 48 WSA [*Definitions*]: **well**.

Groundwater Management Unit (GMU) GMU is a management unit or area delineated for the purpose of applying water management (or more narrowly water allocation) tools such as notations or area-based regulations. GMUs typically have common physical (e.g., physiographic, hydrogeologic) characteristics and/or water management concerns and therefore incorporate a broader range of considerations such as land use or aquatic ecosystems. A GMU may be delineated over a portion of an aquifer where a geologic

deposit may be extensive and is hydraulically connected to multiple surface water sources or underlies highly variable land use. In other cases, it may be composed of a number of smaller aquifers which are hydraulically connected to the same surface water source. In contrast, aquifers are hydrogeologic units delineated solely on the basis of geologic origin and/or hydraulic properties.

Water Allocation Notation is a warning flag regarding water supply limitations on the source and the capacity of the source to provide for additional water use demand. The historical term is "water allocation restriction".

4. LEGISLATION

A water allocation notation is a non-regulatory water management tool, intended to provide guidance to decision makers, which may precede more formal implementation of regulations to restrict or limit water authorizations. The following sections of the *Water Sustainability Act* are relevant to this policy.

Section 9 WSA allows for the granting of a water licence for the diversion and use of water to those qualified to acquire a right.

Section 10 WSA allows for the granting of a use approval for the short term use of water.

Section 14 WSA provides the comptroller and the water manager with powers respecting an application for an authorization. These include, but are not limited to the following:

- Refuse an application,
- Require additional plans or other information,
- Issue one or more conditional or final licences on the terms the comptroller or the water manager considers advisable, or
- Issue a use approval.

Section 15 WSA requires that a decision maker must consider the environmental flow needs of a stream or an aquifer that is reasonably likely to be hydraulically connected to that stream when making a decision on an application, unless a specified decision is exempt under the Water Sustainability Regulation.

Section 39 WSA allows the Lieutenant Governor in Council to reserve water for future allocation for specific purposes, projects or conservation. Water resources may be secured under a reservation for a variety of purposes, projects or uses, including for treaty negotiations and agreements, to accommodate future demand for municipal water supply, provincial power needs, or for environmental protection.

Section 40 WSA allows for the reservation of water under a final agreement of a treaty First Nation. These types of reservations are specific to particular treaty agreements that reserve water for the future uses of the Treaty Nation but exclude power purposes.

Sections 76 to 83 WSA provide for the development of regulations to implement a water sustainability plan that restricts or prohibits particular activities within a plan area, including in relation to land or natural resource use, works or operations, or groundwater (e.g., well construction, well pump installation).

Section 135 WSA provides authority for the closing or restricting new authorizations on a water source when the Lieutenant Governor in Council determines that there is no unrecorded water left in the stream or aquifer or when it is recommended in a water sustainability plan.

Section 136 WSA provides regulation making authority to require licensing for excluded aquifer users (domestic groundwater use), where warranted to protect a specified aquifer or a specified stream reasonably likely to be hydraulically connected to an aquifer(s) in an area. When licensing is required for excluded domestic groundwater users, fees and charges can be charged from the date the regulation imposes the licensing requirement.

5. PROCEDURES

5.1 Water Allocation Notation Framework

Where a statutory decision maker determines that an application should be refused or granted with conditions due to current or potential water allocation concerns related to insufficiency of water, one of the following five types of water allocation notations may be noted in the e-Licensing database, at the discretion of the decision maker, based on information available to the decision maker when making that determination. These could also be supported by the following documentation:

- information presented in an authorization application and related technical assessment report (e.g., any supply and demand analysis; extent of beneficial use of existing rights);
- local knowledge of the source (e.g., complaints of water shortages); or,
- assessment based on direct stream or groundwater testing and monitoring, or a water budget or numerical model.

The framework and guidance for establishing water allocation notations is as follows:

1. **Application Refused (AR)** (previously Refused No Water [RNW]): A previous application for an authorization was refused because there was insufficient water to grant the application. While refusal is often specific to a particular application, the extent of insufficiency may affect future applications on the source. For example, this notation may indicate:

    - A likelihood of detrimental impacts on authorized stream users, or groundwater users;

- A likelihood of detrimental impacts on a stream or aquifer on a local, site-specific scale; or
- It is not feasible for the stream or aquifer to yield the quantity requested at the proposed point of diversion.

2. **Possible Water Shortage (PWS)**: There appears to be limited unrecorded water in the stream or aquifer for any additional authorizations (e.g., source is nearing Fully Recorded stage or there is insufficient water during critical periods). With additional allocation, periods or localities of insufficient water availability are anticipated, but additional evidence may be needed to confirm (e.g., a longer record of monitoring, additional monitoring locations). If insufficiency is likely or the degree, extent and duration of insufficiency is considerable, then FR or FR-EXC might be warranted.

   Use of this notation may reflect different limitations to unrecorded water in different regions of the Province. For example, in coastal areas and islands, the PWS notation may indicate sea water intrusion as a hazard limiting the availability of unrecorded water. In other areas, the notation may be used to reflect limited water availability from chronic seasonal drought during certain periods of time.

3. **Fully Recorded Except (FR-EXC):** There is limited unrecorded water in the stream or aquifer for additional authorizations. Exceptions may be allowed for specified water use purposes (e.g., domestic), small quantities or works (e.g., domestic or small irrigation), or where the impact is mitigated (e.g., having sufficient off-stream storage).

4. **Fully Recorded (FR):** There is insufficient unrecorded water in the stream or aquifer for any additional authorizations. Note that a Fully Recorded (FR) notation, if established for an aquifer, would not be applicable for domestic groundwater use from an aquifer unless there is an applicable regulation under WSA S.135 [regulations closing or restricting access to water source] or S.136 [regulations requiring authorizations for domestic use of groundwater]. (Note that existing domestic groundwater users would be subject to transitioning provisions when a regulation is put in place.)

5. **Office Reserve (OR):** An Office Reserve is established as a temporary notation that reserves unrecorded water in a stream or an aquifer pending negotiations or decisions. An OR may be superseded in time by a water reservation under S.39 or S.40 of the WSA. Contact the Comptroller of Water Rights office for additional information on the specific notation.

In establishing a water allocation notation for a stream or aquifer or confirming an existing notation, it is important to identify documentation on which that is based. Restrictions should always cite the accompanying documentation (such as the file number) where one can find additional information.

5.2 Applying Water Allocation Notations to Aquifers

The current water allocation notation framework can be applied to both stream water and groundwater in aquifers as the concepts of water supply and demand are the same, even if there are some distinct differences between groundwater in aquifers and stream water.

When the framework described above is applied to aquifers there are two basic distinctions:

1. Water allocation notations applied to stream water sources are spatially associated with the point(s) of diversion and usually inferred to apply to the source at all upstream locations. For groundwater, notations can similarly be spatially associated with point(s) of well diversion on an aquifer or, depending on aquifer characteristics, might apply over a larger spatial area correlating to an aquifer or GMU (as of date of this policy, guidance to be developed).

2. It is important to review and confirm the water allocation notation for a specific stream before considering whether the notation should be extended to or used to inform a notation for a hydraulically connected aquifer or a GMU.

5.3 Considering a Water Allocation Notation on a Stream in Authorizing Groundwater Use

In many areas of B.C., groundwater discharge to streams can comprise a high percentage of baseflow, particularly in smaller streams during critical low flow periods. Pumping groundwater from hydraulically connected streams can reduce stream flows by the combined effects of groundwater interception and induced infiltration from the aquifer. However, there is a time delay between the start of groundwater pumping and the observed streamflow depletion and there is a similar delay in streamflow recovery if pumping ends. The impact of pumping in an individual well may be distributed among multiple hydraulically connected streams, depending on geology, topography, regional groundwater flow direction, and distance from the well to each stream.

Water allocation notations in place for streams may inform a decision to establish a water allocation notation on a GMU and aquifers if the assessment of impact on the stream indicates that authorization of groundwater diversions would intensify the water supply issues in the stream, including for environmental flow needs. The scale to which a water availability notation is put in place for an aquifer (i.e., GMU or entire aquifer) may depend on the relative locations and degree of hydraulic connection to multiple streams, aquifer type, and spatial variability in stream sensitivity to groundwater loss. Decision makers may wish to consult a government hydrogeologist for advice on this.

Changes in active licences or use approvals (e.g., cancellations, declarations of beneficial use or abandonments) may have taken place since the time that a stream water allocation notation was put in place. As noted earlier in the policy document, it is important to review and confirm the notation for a specific stream before the notation is extended to or used to inform a notation for a hydraulically connected aquifer.

5.4 Notation Review

If a decision maker believes that changes in water supply or water demand on the stream or aquifer have occurred since the notation was put in place, a review of that notation can be triggered by the decision maker. A notation review may include as appropriate:

- A quantitative analysis of the water supply to the stream / aquifer / GMU which considers direct precipitation, runoff, and storage, as well as inputs from connected streams and aquifers, and upstream watersheds.
- A quantitative analysis of the water demand on a stream / aquifer / GMU which considers demand from existing authorizations, environmental flow needs, and similar downstream requirements.

Potential triggers for notation review include the following:

- Changes to water demand due to authorization abandonment or cancellation, issuance of new authorizations or establishment of water reserves;
- Changes to water availability as a result of an EFN assessment; and
- Changes to water availability as a result of hydrologic or hydrogeologic monitoring or assessment.

5.5 Considerations for the Decision Maker

If a notation is in place and further authorization applications are received, a decision maker may wish to conduct additional monitoring and technical analysis. Appropriate actions would be determined at the discretion of the decision maker based on assessed risks and likelihood of potential impacts from further authorizations. Table 1 below provides some guidance to decision makers based on the notation type.

Table 1. Guidance to Decision Makers

Notation Type	Considerations
Application Refused (AR)	Technical analysis to determine whether any water remains available for individual (smaller quantity) applications or to determine the authorization terms and conditions needed to mitigate adverse effects.
Possible Water Shortage (PWS)	To better understand potential impacts from a specific diversion, consider asking the applicant for additional information or placing terms and conditions in an authorization, e.g., measuring and reporting. Consider establishing data collection or monitoring through other regulatory requirements or government programs to better understand sources of uncertainty, as well as probability, duration and degree of impacts. Consider consulting with government hydrogeologists and hydrologists to better quantify water availability or insufficiency for future authorizations or for recommendations on possible conditions for consideration in future authorization decisions.
Fully Recorded (FR)	Consider establishing ongoing monitoring, as well as water use reporting, either through authorization conditions, regulatory requirements or government programs to: verify the notation; determine impacts and/or respond to climate change; periods of water scarcity or loss of habitat. As resources permit, the decision maker may consider whether to establish a time frame or triggers for a notation review (3 to 5 years) for high risk or high demand streams or aquifers, including further analysis (e.g. confirmation of beneficial use, studies to refine EFN, development of water budgets or numerical models to quantify water availability) and, where warranted, this scientific work may inform consideration of legal regulatory tools in the *Water Sustainability Act* (as described in Section 5.6).
Fully Recorded Except (FR-EXC)	See guidance for Fully Recorded above. If the issuance of an authorization or refusal of an application results in FR-EXC notation on a water source, consider whether reporting requirements should be included (where warranted) as recommended authorization conditions.
Office Reserve (OR)	Consider scheduling review of office reserve notations on a regular basis (i.e., 3 to 5 years) or as needed, as the notation is intended as a temporary notation to be superseded in time by a water reservation under S.39, S.40 or S.135(2) of the WSA.

5.6 Legal Regulatory tools

A water allocation notation is a non-regulatory water management tool intended to provide guidance to decision makers, which may precede more formal implementation of regulatory water management tools.

The WSA enables additional regulation development, such as to restrict or limit water authorizations, through the following:

- If sufficient unrecorded water is not present in a specified stream or aquifer or if recommended in a water sustainability plan, the Lieutenant Governor in Council may make regulations to close or restrict access to a water source (S. 135 (2) of the WSA).
- For the purpose of a water sustainability plan, the Lieutenant Government in Council may restrict or prohibit particular activities within a plan area, including in relation to land or natural resource use, works or operations (S. 76 to 83 of the WSA).
- For the purpose of a water sustainability plan, the Lieutenant Governor in Council, may also restrict or prohibit groundwater activities (e.g., well construction, well pump installation) (S. 83 (1) of the WSA).
- To protect specific aquifers or streams, the Lieutenant Governor in Council may require authorizations for domestic use of groundwater in a specified area (S. 136 (1) of the WSA).
- Minister's regulations restricting groundwater activities (S. 137 (1) of the WSA) stipulate that the minister may restrict or impose requirements on groundwater activities, including to require authorizations for drilling.