



## Virginia Department of Planning and Budget **Economic Impact Analysis**

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**9 VAC 25-910 General Permit for Use of Surficial Aquifer on the Eastern Shore**  
**Department of Environmental Quality**  
**Town Hall Action/Stage: 5341 / 9195**  
February 23, 2021

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### **Summary of the Proposed Amendments to Regulation**

Pursuant to Chapter 755 of the 2019 Acts of Assembly,<sup>1</sup> the State Water Control Board (Board) proposes to create a general permit to incentivize the withdrawal of groundwater from the surficial aquifer in the Eastern Shore Groundwater Management Area rather than from the deep aquifer in that management area.

### **Background**

In order for a person or entity to withdraw 300,000 gallons or more of groundwater per month from a Groundwater Management Area (GWMA), they must first obtain a groundwater withdrawal permit. There are two GWMA's in the state: the Eastern Virginia Groundwater Management Area which includes all areas east of Interstate 95; and the Eastern Shore Groundwater Management Area (ESGMA) which includes Accomack and Northampton counties. This regulatory action pertains specifically to the ESGMA.

According to the Department of Environmental Quality (DEQ), the groundwater withdrawals from the deep aquifer in the ESGMA have increased due to agricultural activities such as irrigation and due to modernization and cooling needs of poultry houses (e.g. misting of poultry to keep them cool). In particular, DEQ states that large poultry processing companies in the area (e.g. Purdue and Tysons) have been procuring poultry from growers closer to the processing plants in order to reduce their transportation costs.

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<sup>1</sup> <https://lis.virginia.gov/cgi-bin/legp604.exe?191+ful+CHAP0755&191+ful+CHAP0755>

Withdrawals from the deep aquifer is generally preferred by users over the surficial aquifer due to the consistency of water quality. Deep aquifers (also known as confined aquifers) are those in which an impermeable dirt/rock layer exists that prevents water from seeping into the aquifer from the ground surface located directly above. Instead, water seeps into confined aquifers from farther away where the impermeable layer does not exist. In contrast, surficial aquifers (also known as unconfined aquifers) are those into which water seeps from the ground surface directly above the aquifer. These differences produce higher quality water in the deep aquifers than the surficial aquifers, which can contain contaminants from the application of fertilizer, preservatives, other pollutants; and salt water mix to some extent. However, deep aquifers recharge much more slowly (hundreds to thousands of years depending on depth) than the surficial aquifers, which typically recharge annually based on rainfall. This has raised concerns locally that the deep aquifers may be depleted if more water is withdrawn from them than would be expected to be provided by recharge.

The General Assembly addressed these concerns with Chapter 755 of the 2019 Acts of Assembly, which mandated the Board to adopt regulations to provide incentives for the withdrawal of groundwater from the surficial aquifer rather than from the deep aquifer in the ESGMA. According to the mandate, such incentives may include extended permit terms of as long as 20 years, an accelerated permit process, discounted permit fees, other subsidies, or other incentives.

In response, the Board proposes to establish an accelerated permit process for the use of the surficial aquifer for non-potable purposes through the creation of a general permit. Any individual, business, or other entity choosing to withdraw 300,000 gallons in a month or more of groundwater from the surficial aquifer in the ESGMA would be eligible for a general permit that would be valid for 15 years.

### **Estimated Benefits and Costs**

Although there is no general permit currently for groundwater withdrawals, there are individual permits: 58 for agricultural uses, 24 for irrigation uses, 14 for municipal uses, eight permits for commercial uses, two for industrial uses, and one for fossil power (107 individual permits in total). The proposed rules would not directly affect the currently issued individual

permits, but rather provide incentives to the permit holders to obtain a general permit rather than an individual permit when their individual permit expires, which also has a duration of 15 years.

The proposed general permit would provide a number of benefits. These include 1) reduced permit application fees; 2) the avoidance of detailed geotechnical studies as part of the individual permit application and not having to pay fees to publish public notices; 3) accelerated permit processing times; 4) the use of a water conservation and management checklist form for annual reporting of water conservation actions implemented instead of a customized conservation plan and reporting; and 5) simplified water withdrawal reporting to assess how much water is being withdrawn, including less frequent reporting (annually as opposed to quarterly).

Agricultural entities, which comprise the vast majority of the permit holders, are currently exempt from the individual permit fee and would also be exempt from the fee for the proposed general permit. Thus, the fee related impact would be on non-agricultural entities who would be subject to a \$600 general permit fee compared to the current \$9,000 individual permit fee. Although permit revenues would likely decrease, DEQ states that the permit revenues comprise a small portion of the program's budget (approximately 7-12 percent depending on the year from permit fees, compared to 88-93 percent from the general fund), and DEQ expects that staff time allocated to the processing of these general permits can be absorbed.

The cost of a geotechnical study required for an individual permit ranges from a one-time expense of \$1,500 to \$5,000 every 15 years. This cost could be avoided if a user chooses to apply for a general permit, provided no special circumstances exist as specified in the proposed language (such as withdrawals that require a well that is more than 80 feet deep). Similarly, publication of a notice in a newspaper at a cost of \$200-\$300 every 15 years, or whenever a significant modification to the permit is needed, may be avoided with a general permit. Additionally, since the data and evaluation requirements of a general permit are lower in comparison to an individual permit, the permit processing times for a general permit are shorter. It is expected that 10-12 hours per year for most facilities would be needed to conduct meter readings and assess the conservation measures, fill out the form, and provide it to DEQ, which according to DEQ represents about a four-fold reduction in hours compared to an individual permit.

Depending on the geologic properties of the surficial aquifer and its water quality at the project location, it is possible that more than one well (generally no more than 80 feet deep) would need to be drilled in the surficial aquifer to achieve the same yield as a well drilled in the confined aquifer (generally about 300 feet deep). This may increase the drilling costs. However, since the drilling costs are typically based on each foot of depth, there is the potential to achieve the same yield with more wells of a shorter drilling depth. For example, if three wells that are each 80 feet in length produce the same yield as a 300 foot confined aquifer well, then drilling costs may actually decrease (240 feet vs 300 feet of drilling).

It must be noted, however, that even though there are uncertainties in the cost difference estimates between obtaining an individual permit vs. a general permit, a general permit is optional and not mandatory. Thus, we can reliably infer that the perceived benefits of a general permit to the user would exceed its perceived costs if it is chosen. Accordingly, a decision regarding whether to renew an individual permit or instead obtain a general permit would depend on the magnitude of benefits the general permit would provide to the existing permit holders. Similarly, new applicants would likely weigh costs and benefits of obtaining a general vs. individual permit.

Since existing permit holders already have established wells for deep aquifers, and are not required to change to the surficial aquifer, the incentives for them to use a general permit appear lower. Moreover, a well that is already built and in use represents a sunk cost to the existing permit holders, because they would need to abandon an existing well if they choose to apply for a general permit and then build a new well. New applicants, on the other hand, would be able to decide between constructing a well for deep versus surficial uses. In addition, it is likely that there will be public opposition to new deep aquifer withdrawal permits for non-public water supply. As a result of these facts, the number of likely prospective users of a general permit is subject to great uncertainty and an estimate does not currently exist, but this regulatory change appears more likely to impact new users than existing ones.

As for the impact on entities other than the direct user, greater use of the surficial aquifer is expected to conserve groundwater supplies within confined aquifers, making them available for potable use over a longer period. If this action is successful in promoting greater use of the surficial aquifer, it would delay any new capital investments a locality may need to make to

secure surface water due to declines in groundwater availability. The rate of potential saltwater intrusion in the confined aquifers is also expected to be reduced through greater use of the surficial aquifer. This action should not, however, have an effect on land subsidence (e.g. sinkholes), which is not considered a threat on the Eastern Shore due to its hydrogeology.

### **Businesses and Other Entities Affected**

The proposed amendments would primarily affect prospective groundwater withdrawal permit applicants for non-potable uses. There is no reliable estimate on how many prospective users may choose this option, but some are expected to do so. The prospective users in the ESGMA may be particularly affected as they would have an option to reduce their groundwater withdrawal permit costs.

In addition, the Department of Conservation and Recreation, which has a state park in the area, may be able to meet their water needs through the use of this general permit, thereby saving them time and money as discussed above.

### **Small Businesses<sup>2</sup> Affected:**

If there are any, the prospective permit applicants are likely to be small businesses. However, the proposed general permit does not appear to adversely affect small businesses.

### **Localities<sup>3</sup> Affected<sup>4</sup>**

ESGMA includes the counties of Accomack and Northampton, which would particularly benefit from the proposed amendments to the extent prospective and non-potable use applicants choose a general permit over an individual permit. These localities themselves may also prefer a general permit over an individual permit for their own non-potable municipal uses saving them time and expense. Currently, Accomack County has one permit for municipal water supply. Northampton County as an entity does not have a permit, but the Town of Cape Charles (which is the County seat) has one municipal water supply permit. Furthermore, improved conservation of deep aquifers in their area would also be beneficial for people living in these two counties.

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<sup>2</sup> Pursuant to § 2.2-4007.04 of the Code of Virginia, small business is defined as “a business entity, including its affiliates, that (i) is independently owned and operated and (ii) employs fewer than 500 full-time employees or has gross annual sales of less than \$6 million.”

<sup>3</sup> “Locality” can refer to either local governments or the locations in the Commonwealth where the activities relevant to the regulatory change are most likely to occur.

<sup>4</sup> § 2.2-4007.04 defines “particularly affected” as bearing disproportionate material impact.

## Projected Impact on Employment

The proposed amendments do not appear to directly affect total employment.

## Effects on the Use and Value of Private Property

The potential cost savings through the proposed general permit may reduce costs of prospective non-potable use permit applicants, which in turn could add to their asset values. Expected positive improvements in deep water conservation are not likely to directly impact real estate development costs in the short-term, but may add to the value of land over the long term.

## Legal Mandates

**General:** The Department of Planning and Budget has analyzed the economic impact of this proposed regulation in accordance with § 2.2-4007.04 of the Code of Virginia (Code) and Executive Order 14 (as amended, July 16, 2018). Code § 2.2-4007.04 requires that such economic impact analyses determine the public benefits and costs of the proposed amendments. Further the report should include but not be limited to: (1) the projected number of businesses or other entities to whom the proposed regulatory action would apply, (2) the identity of any localities and types of businesses or other entities particularly affected, (3) the projected number of persons and employment positions to be affected, (4) the projected costs to affected businesses or entities to implement or comply with the regulation, and (5) the impact on the use and value of private property.

**Adverse impacts:** Pursuant to Code § 2.2-4007.04(D): In the event this economic impact analysis reveals that the proposed regulation would have an adverse economic impact on businesses or would impose a significant adverse economic impact on a locality, business, or entity particularly affected, the Department of Planning and Budget shall advise the Joint Commission on Administrative Rules, the House Committee on Appropriations, and the Senate Committee on Finance within the 45-day period.

If the proposed regulatory action may have an adverse effect on small businesses, Code § 2.2-4007.04 requires that such economic impact analyses include: (1) an identification and estimate of the number of small businesses subject to the proposed regulation, (2) the projected reporting, recordkeeping, and other administrative costs required for small businesses to comply with the proposed regulation, including the type of professional skills necessary for preparing required reports and other documents, (3) a statement of the probable effect of the proposed regulation on affected small businesses, and (4) a description of any less intrusive or less costly alternative methods of achieving the purpose of the proposed regulation. Additionally, pursuant to Code § 2.2-4007.1, if there is a finding that a proposed regulation may have an adverse impact on small business, the Joint Commission on Administrative Rules shall be notified.