

# Surface and Groundwater *Management*



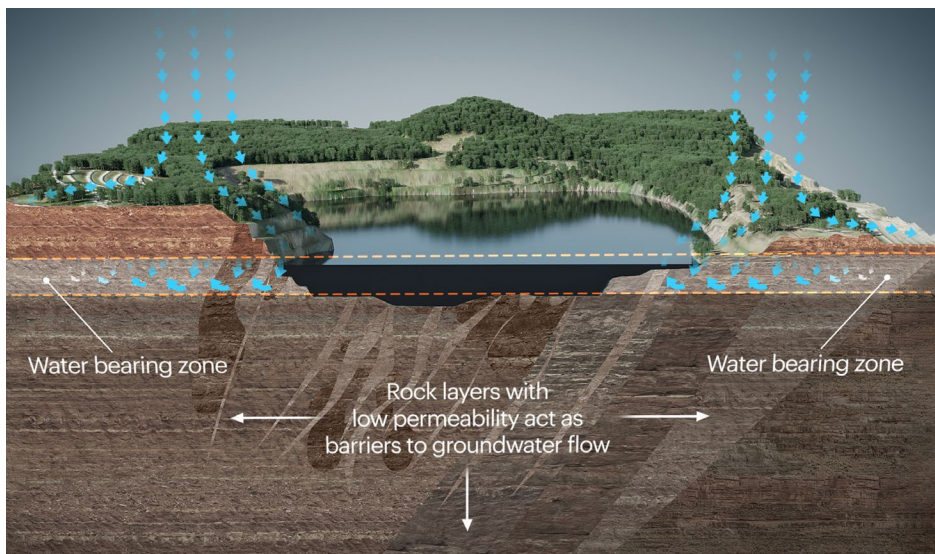
To operate the Kings Mountain Mine in an environmentally protective manner and implement water management industry practices, Albemarle has conducted detailed water studies and modeling to predict flows within the project area for all phases of the mine plan. Areas of study include groundwater, surface water (including stormwater) and water usage during mining operations. This information will be used to design and deploy safe and environmentally responsible mining methods that protect water resources.

## GROUNDWATER HISTORY

According to historical data, the existing mine pit began filling with water decades ago and the rising water levels in the pit are attributed to years of rainwater accumulation, with some inflow from the surrounding groundwater system.

Results from geological and geotechnical studies and groundwater modeling show that the rock units surrounding and under the mine site have low permeability and do not store or transmit water very easily. That layer of rock units, and other geologic features, act as underground barriers to prevent groundwater flow to or away from the site.

Through our modeling, we can confirm that the pit water and deeper external groundwater levels are physically disconnected around the mine pit, and we do not anticipate impacts on the quality or quantity of surrounding groundwater resources.



## GROUNDWATER MODELING

Albemarle uses conceptual and numerical modeling to gain a better understanding of the hydrogeology and groundwater behavior in the area surrounding the mine pit. We built the models by observing the inflow rates during previous mining operations, monitoring water levels from hundreds of data points, and performing onsite drilling and specialized testing. These methods and results give us a high level of confidence in the characteristics and behavior of groundwater resources over the life of mine operations, reclamation and closure.



**Studies and modeling show the rock units surrounding and under the mine site have low permeability.**



**Water Monitoring:** Project scientists use equipment to monitor creek parameters and gather data used to determine water quality, depth, clarity, fish passage and sediment levels.

## SURFACE WATER MANAGEMENT

Albemarle intends to implement industry best practices for surface water management at the Kings Mountain site. These practices include minimizing potential effects on the downstream environment by managing water within the site footprint to achieve water quality and quantity objectives. Surface water on the mine site is divided into two categories based on how the water is used and/or how it encounters mining activities.

Water that has only encountered vegetated or newly constructed native soil surfaces can meet discharge water quality and be released to the environment with appropriate sediment controls such as silt fencing and sediment retention ponds.

Water that encounters mining activity such as the mine pit, rock storage facilities and haul roads is planned to be collected and may require de-sedimentation and monitoring to confirm water quality standards before release.

## Positive Water Balance

The Kings Mountain Mine is designed to operate with a positive water balance meaning the water supply used to support project operations will come from collected precipitation that is pumped and/or piped for storage in an onsite water storage basin. The project is anticipated to only require external use of groundwater or municipal sources of water for drinking, fire protection and sanitary purposes.

## ONGOING WATER MONITORING

Albemarle currently monitors surface and groundwater with our extensive monitoring network by performing quarterly water quality sampling and analysis and flow monitoring at select locations. This monitoring is planned to continue throughout the entire life of the proposed mine.

Our groundwater monitoring well network is robust, currently consisting of 38 monitoring wells. A 3rd party public well survey was conducted in 2022 to identify existing private wells in the area.

Based on our monitoring plan, we can check model predictions against real-life observations. Through the deployment of safe and environmentally responsible mining methods, we intend to protect and care for water resources.

## MITIGATION PLANNING

Albemarle has developed a water supply well mitigation plan that includes ongoing monitoring and potential mitigation through the development and operation of the mine as well as into reclamation and closure. The plan will also be filed with the North Carolina Department of Environmental Quality (DEQ) as part of our permitting process.

While impacts to surrounding water resources are not expected, if neighboring wells have a decrease in well performance during operations, the plan calls for Albemarle to further investigate and determine the appropriate mitigation measures in consultation with stakeholders.



**Albemarle monitors surface and groundwater quality and flow using an extensive network of monitoring wells and locations.** *Sampling and analysis are conducted quarterly and is anticipated to continue through the life of the proposed mine.*

Further information is available in Spanish upon request or at [albemarlekingsmountain.com](http://albemarlekingsmountain.com)

For more information or to provide community feedback on the project:  
Email: [kmcommunity@albemarle.com](mailto:kmcommunity@albemarle.com) | Phone: 704-734-2775 | Website: [albemarlekingsmountain.com](http://albemarlekingsmountain.com)  
Mail or In-person: 129 West Mountain Street, Kings Mountain, NC 28086

Albemarle leads the world in transforming essential resources into critical ingredients for mobility, energy, connectivity and health. We partner to pioneer new ways to move, power, connect and protect with people and planet in mind, enabling a more resilient world. Our global headquarters is approximately 35 miles from Kings Mountain in Charlotte, NC.

