

The Element

September 2023



DoD BOOSTS U.S. LITHIUM PRODUCTION ▶

The U.S. Department of Defense announced a \$90 million grant for Albemarle Corporation to help support the expansion of domestic mining and the production of lithium for the nation's battery supply chain.



TAILINGS Q&A ▶

D. Morgan Warren, a Lithium Resources Group Geochemist at Albemarle, explains the tailings and waste rock process Albemarle uses to keep mining sites operating safely and sustainably.



COMMUNITY HIGHLIGHTS ▶

Albemarle had a busy few weeks out and about in the Kings Mountain community. Read more about its involvement in the [Community Highlights](#).



Upcoming Events *Calendar* ▶

SEPTEMBER 28–OCTOBER 8: CLEVELAND COUNTY FAIR

It's Fair Season in Cleveland County! As a sponsoring partner, Albemarle will host a booth in Goforth Exhibition Hall and a heavy equipment display at the main gate to highlight its partnership with Cleveland Community College. The Cleveland County Fair is the largest agricultural event—and one of the largest fairs—in North Carolina, averaging between 125,000–150,000 visitors each year. Be sure to stop by and say hello and learn more about the proposed Kings Mountain mine project!

[More upcoming community events ▶](#)



[Visit the Albemarle Kings Mountain Website ▶](#)



[Scan the QR code to read more news!](#)

Spotlight on Albemarle's *Kings Mountain Summer Interns*

While many college students around the world spent their summer resting, relaxing and recharging, Braden Panther and nine other students chose a different route. These students spent 12 weeks working at Albemarle's Kings Mountain site as interns, learning everything from project management to chemical engineering, "gaining valuable industry experience before even kicking off our careers," said Braden.

"My experience was phenomenal—but don't take my word for it!"

Before heading back to Wake Forest University, Braden interviewed a few interns to learn more about their experiences.

ZACH CRAWFORD

Appalachian State University, Mining Intern

"Having lived in Kings Mountain my whole life, the opportunity to intern with Albemarle has been special," explains Zach Crawford. "I didn't realize until I spent some time here how cool it really is that a Fortune 500 manufacturing site is so close to home!"

Zach highlights how much he has learned about procurement, supply chain, and lithium in just 12 short weeks. He also got involved with Albemarle's efforts to give back to the Kings Mountain community.

"Not only is Albemarle exciting to me because it leads the future of energy storage, but it's great to be working at a company that is so dedicated to environmental and social sustainability. As an individual growing up in a community that has real concerns around food insecurity and limited healthcare, my involvement with local groups gives me a deeper appreciation for the charities involved within Cleveland County. This summer, I have been able to volunteer with Feeding Kids Cleveland County and NC MedAssist through my internship. These opportunities mean a lot to me."



AUSTIN VILLHARD

University of Missouri, Geology Intern

As the only hard-rock lithium intern in America, Austin Villhard is grateful for the unparalleled opportunity he's received from his time with Albemarle.

"Working at one of the first hard-rock lithium mines in North America has set me up in a big way," he said, adding: "It all starts with geology, and projected mineral demand forecasts that my experience will be highly sought-after soon. The exposure I've gained at my first internship is a huge advantage for my career, and it's so unique that even my professors have never seen the types of things I did this summer."

Austin served in the U.S. Army for six years and is confident that with this experience, he can jump-start his career. During the last week of his internship, he spent time in London attending the Society of Economic Geologists conference with members of Albemarle's geology department.



Spotlight on Albemarle's Kings Mountain Summer Interns

Continued



AZIN SABERI

North Carolina State University, Manufacturing Intern

"I love the welcoming environment in Kings Mountain," said Azin Saberi. "I couldn't ask for a better place to learn and grow as an engineer and as a professional."

MINORI KITAHATA

Cornell University, Research and Development Intern

"I felt like an equal here," said Minori Kitahata, "Everyone treats the interns with respect, which is cool because Albemarle is such a big company."

CAMRYN SANCHEZ

Texas A&M University, Manufacturing Intern

As an intern, Camryn Sanchez said, "I was able to explore my personal interests with the help of my supervisor. Everyone went above and beyond to help me have the best experience I could have."

Interested in working for Albemarle? Find out more by visiting albemarlekingsmountain.com/workforce.

Albemarle Receives \$90 Million To Boost U.S. Lithium Production

On 12-September, the U.S. Department of Defense announced a [\\$90 million grant for Albemarle Corporation](#) to help support the expansion of domestic mining and the production of lithium for the nation's battery supply chain.

The funding will be provided by the Office of the Assistant Secretary of Defense for Industrial Base Policy, utilizing Defense Production Act authorities, and will be used to purchase a fleet of mining equipment as part of Albemarle's planned reopening of its lithium mine in Kings Mountain, North Carolina.

The planned Kings Mountain mine contains one of the few known hard rock lithium deposits in the U.S. The site is expected to feed sufficient material for 50 kt LCE of conversion capacity and support the manufacturing initially of approximately 1.2 million electric vehicles annually.

"As one of the only U.S.-based lithium companies to carry out lithium extraction, processing, and novel lithium battery material research in the United States, Albemarle is uniquely positioned to help power the clean energy revolution," said Albemarle's President of Energy Storage, Eric Norris.

"Lithium is an essential ingredient in our sustainable energy future. Demand is expected to increase significantly, and it is imperative to secure our nation's supply of this critical resource."

Albemarle estimates that Kings Mountain will become operational as early as late 2026, pending permitting. At Kings Mountain, Albemarle is implementing "IRMA-Ready" standards—an operational playbook for mine sites in the exploration phase. Initiative for Responsible Mining Assurance (IRMA) standards emphasize environmental stewardship and community engagement.



Turning Heads *With Tailings*

D. Morgan Warren, a Lithium Resources Group Geochemist at Albemarle, focuses on understanding the environmental behavior of mine rock and tailings so that Albemarle's mines can operate sustainably. During a recent interview, Morgan shared his knowledge on some frequently asked questions about the tailings and waste rock process to help the Kings Mountain community better understand the efforts Albemarle is taking to keep this proposed mine site operating safely and sustainably.

What are tailings?

Tailings are the leftover material from processing ore at a mine site. These materials include the ground-up leftover rocks and minerals and are typically sand-sized.

How are they managed?

The short-term and long-term storage of the material will be to "stack" the tailings in a surface impoundment called a Tailings Storage Facility (TSF). The TSF will be surrounded by an embankment (or dam) made of large boulders and rocks excavated from the mine. In contrast to conventional slurry tailings which are typically mixed with water, Albemarle will be using state-of-the-art dry stack tailings technology to minimize any environmental hazard associated with tailings storage.

Where will the Kings Mountain tailings be stored?

Tailings generated during mining will be stored in stockpiles on Albemarle-owned property. The stockpiles will be constructed using dry stack tailings technology to minimize the amount of water contained within the TSFs, which promotes greater engineering stability.



How can tailings be used or repurposed?

Tailings are typically the non-economical portion of the mined and crushed ore rock/minerals that do not contain any significant lithium or other minerals of value. However, tailings may have other properties that are useful for other industries such as for construction fill, ceramics, brick making, pozzolanic materials for concrete, geopolymers, and reprocessing for different ores, to name a few examples.

What is waste rock? How is it different than tailings?

Waste rocks are rocks that do not contain economic amounts of ore, but require excavation to be able to access the rocks that contain economic amounts of ore. These rocks do not go to processing and are placed in a stockpile on the ground surface or back in the pit after mining. Tailings are generated as a by-product of processing the rocks that contain the ore.

Tailings represent the non-ore components (e.g., minerals) that are attached/connected to the spodumene ore that are unable to be separated from the ore rocks during initial blasting and hauling. Tailings are generally sand-sized fragments of ground-up rocks left over after processing that are often stored in stockpiles on the ground surface.

How will the rock waste be managed during and after mining?

The waste rock will be moved by trucks to specific waste rock storage dumps (WRDs). Waste rock with the potential to adversely affect water quality will be stored on a lined WRD that will collect the runoff and seepage from the waste rock and direct it to a water treatment storage facility. At mine closure, the waste rock will go into the pit under a water cover that limits any sulfide oxidation that could generate acidic conditions. Albemarle will also investigate repurposing the waste rock as raw materials for other industries such as construction and ceramic industries. There is very little possibility of the mine becoming a dump site. Albemarle strictly prohibits any unauthorized dumping of material on the mine site.

Turning Heads *With Tailings*

Continued

Will any of the material in the waste rock leak into the community's groundwater?

Rainwater will runoff and infiltrate through the WRDs and TSFs. Waste rock with the potential to adversely affect water quality will be stored on a lined WRD that will collect the runoff and seepage from the waste rock and direct it to a water treatment storage facility. The use of a liner will greatly minimize the possibility that rainwater will infiltrate and leak into groundwater. Albemarle has conducted extensive environmental testing on the tailings and waste rock so that the location of any waste rock that may adversely affect the environment will be tracked and properly managed.

Are there plans to make use of byproducts like sand, gravel, etc. from the mine?

Yes, Albemarle will evaluate repurposing waste rock and tailings to other industries that use these types of raw materials.

What should others know/understand about tailings and waste rock?

The tailings that will be produced by reopening the proposed Kings Mountain mine are very similar to the tailings produced when the mine was operating 40+ years ago and as such are non-hazardous materials. Like the tailings, the waste rock that will be produced by reopening the proposed Kings Mountain mine is very similar to the waste rock that was produced when the mine was operating 40+ years ago. The waste rock from historical mining has had very minimal effects on water quality. Albemarle will continue to monitor and test in the future.

ESIA *Process Update*

In November, Albemarle will publish and publicly release the first major publications that will feed into the Environmental and Social Impact Assessment (ESIA) – the Scoping and Baseline Reports. The Scoping Report is designed to inform the ESIA by identifying potential impacts of the proposed Kings Mountain lithium mine on the surrounding community and environment. The goal in identifying impacts is to best inform ways to minimize risks and enhance beneficial opportunities. It should be noted that the ESIA is entirely separate from but is in alignment with and complements the permitting process. Albemarle has voluntarily commissioned this ESIA to comply with best industry practices as established by the Initiative for Responsible Mining Assurance (IRMA).

The Scoping Report will identify potential impacts on the physical environment (climate, air quality, noise, geology, water resources, natural hazards), the biological environment (flora and fauna, natural protected areas, critical habitat assessment), and the social environment (social infrastructure, local economy, environmental justice, community health and safety, visual landscape, cultural heritage). The Scoping Report also includes stakeholder engagement plans, a Project description, and information on the ESIA process and objectives. Once potential impacts are identified through the Scoping Report, they will be further analyzed as part of the ESIA.

The Scoping Report results will be distributed to the community for review and comment. Details on how to comment, including times, locations, and communication channels, will be released alongside the Scoping Report.

Albemarle will continue hosting public meetings to hear directly from all individuals and invites the community to ask questions, give comments, and ultimately inform the ESIA analysis. Feedback is welcome at any time via our [website](#), email (kmcommunity@albemarle.com), project hotline (704-734-2775), or in person at our **Project Center at 129 West Mountain Street**. For more information on the ESIA, please see the [full ESIA announcement](#) on our website.



A Recap of the August Town Hall

On August 31, Albemarle hosted a Town Hall at our Project Center in downtown Kings Mountain. Following a “science fair” approach, we set up displays around the office that highlighted important topics focused on mine development including mineralogy, hydrogeology, mining operations, geology, and safety. Another key topic was Albemarle’s work on the environmental and social impact assessment (ESIA) of the proposed mine which looks at the positive and adverse impacts the project may have on the community.



A lithium-themed scavenger hunt gave Town Hall attendees a chance to learn more about how this critical element supports our everyday lives as they searched for items placed throughout the Project Center. At the event’s end, one lucky winner got to take home a lithium prize pack which included items that were made possible through the use of lithium.

If you would like to learn more about any of the topics shared at the Town Hall or would like to provide any feedback to Albemarle about the proposed project, please contact us at kmcommunity@albemarle.com or **704-734-2775**.

Fighting Fires at Home— *Fire Prevention in Kings Mountain*

On September 16, Albemarle employees helped to make the community safer by installing smoke alarms in some area Kings Mountain homes. Coordinated by the Blue Ridge Piedmont Chapter of the American Red Cross, the event began with a breakfast for the volunteers, firemen Albemarle and Red Cross staff.

The participants formed three teams and walked various neighborhoods to hand out smoke detectors to residents. Over the course of two hours, volunteers knocked on 100 doors and installed 33 smoke detectors.

This event was a part of a national campaign by the American Red Cross and local fire departments and community groups to help install smoke alarms and share fire prevention tips in those areas with high numbers of fires.

If you would like a smoke detector installed in your home, contact the American Red Cross at **919-675-2270** or call Kings Mountain Fire department at **704-734-0555**.





Kings Mountain Honors Service Men and Women on Patriots Day

Albemarle Kings Mountain was honored to attend the Patriots Day Ceremony at the Kings Mountain Fire Station. This was a National Day of Prayer and Remembrance for the victims of the terrorist attacks on September 11, 2001. There were many moving remarks during the ceremony; Fire Chief, Thomas Harmon; Mayor, Scott Neisler; and keynote speaker United States Air Force Master Sergeant, John Whitaker, who served in many missions in the war on terror. The overarching theme was to show appreciation for the emergency responders who gave their lives on that day, (and EVERY day!) and to our service men and women who have sacrificed for the war on terror.



Upcoming Events *Calendar* ▶

SEPTEMBER 28: COMMUNITY TOWN HALL

The community Town Hall will take place at 6:30pm at Trackview Hall, 205 S Battleground Ave, Kings Mountain.

OCTOBER 10, 18, 19 AND 25: KINGS MOUNTAIN MINE TOURS

The 45-minute tour will include history, geology, and current information on the pre-feasibility studies that have been completed, with plenty of opportunities to ask questions. Tour attendees will meet at the Albemarle Project Center (129 W. Mountain Street), and travel together by van to the mine site. Times vary and registration is required, contact Cindy Estridge cynthia.estridge@albemarle.com.



TOWN HALL LINKS TO VIDEOS ▶

[2023 February](#)

[2023 May](#)



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