

**8. CITIZEN REQUEST TO ADDRESS THE BOARD  
MRS. VIRGINIA CUTCHIN**

Attached for your reference please find correspondence from Mrs. Virginia Cutchin requesting time on your agenda to speak regarding Uranium Mining in Virginia. She has also invited Mr. Andrew Lester, Executive Director of the Roanoke River Basin Association in Danville to speak to the technical aspects of the issue.

She will be requesting the Board to consider adoption of a resolution supporting continuation of the 30-year ban on uranium mining in Virginia.

In 1982, the General Assembly enacted legislation prohibiting the mining of uranium in Virginia. This action was taken following the discovery of a substantial deposit of uranium near Chatham in Pittsylvania County. The issue was not revisited until 2007, when the price of uranium increased significantly, thus renewing the business interest in mining. This has led to reconsideration of the moratorium on uranium mining.

A series of studies has been completed by the National Academies of Sciences at the request of the Virginia Coal and Energy Commission, by several private entities and by the City of Virginia Beach since 2007. These studies have addressed the gamut of issues associated with uranium mining, including technical, economics, environmental impacts, water supply impacts and the regulatory framework. The McDonnell Administration established the Uranium Mining Work Group, consisting of staff representatives from the Virginia Departments of Environmental Quality, Health, and Mines, Minerals and Energy to assess whether the moratorium should be lifted and, if so, under what conditions.

Her request is consistent with Sec. 2-45 of the Southampton County Code and she has been advised that the matter has been placed on your agenda.

**MOTION REQUIRED:**

**If the Board is so inclined, a motion is required to adopt the attached resolution supporting continuation of the ban on uranium mining in Virginia.**

Mr. Michael Johnson

Southampton County Administrator

Southampton County Offices

Courtland, VA 23837

I would like to address the Southampton County Board of Supervisors at the November 26, 2012, meeting. With me will be Mr. Andrew Lester, Executive Director of the Roanoke River Basin Association, an Institute for Advanced Learning and Research, in Danville, Virginia. (434-250-1185)

Our topic will be the pros and cons of Uranium Mining in Virginia with the emphasis on the adverse effects the mining will have on Virginia.

I will be asking the Board to sign a petition to keep the ban on uranium mining in Virginia. This is important because the current ban is expiring and there are no regulations in place to guide uranium mining.

Thank you for allowing us to be on the agenda.

Sincerely,



Virginia Cutchin

29018 Darden Point Rd.

Courtland, VA 23837

757-562-6559

# SOUTHAMPTON COUNTY

26022 Administration Center Drive  
P. O. Box 400  
Courtland, Virginia 23837



757-653-3015  
Fax: 757-653-0227

November 19, 2012

Mrs. Virginia Cutchin  
29018 Darden Point Road  
Courtland, VA 23837

Dear Mrs. Cutchin:

I am pleased to acknowledge receipt of your letter on November 16 requesting time at the next Board of Supervisors meeting to discuss uranium mining in Virginia.

The meeting will begin promptly at 7:00 p.m. on Monday, November 26, 2012 in the Board of Supervisors Meeting Room, Southampton County Office Center, 26022 Administration Center Drive, Courtland. This matter will appear as agenda item #8.

Chairman Jones will call for your comments at the appropriate time.

With kind regards, I remain

Sincerely,

A handwritten signature in black ink, appearing to read "Michael W. Johnson".

Michael W. Johnson  
County Administrator



**BOARD OF SUPERVISORS  
SOUTHAMPTON COUNTY, VIRGINIA**

**RESOLUTION 1112-08**

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At a regular meeting of the Board of Supervisors of Southampton County, Virginia, held in the Southampton County Office Center, Board of Supervisors' Meeting Room, 26022 Administration Center Drive, Courtland, Virginia on Monday, November 26, 2012 at 7:00 p.m.

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**PRESENT**

The Honorable Dallas O. Jones, Chairman  
The Honorable Alan W. Edwards, Vice Chairman  
The Honorable Carl J. Faison  
The Honorable S. Bruce Phillips  
The Honorable Barry T. Porter  
The Honorable Glenn H. Updike  
The Honorable Ronald M. West

**IN RE: MINING OF URANIUM IN VIRGINIA**

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Motion by Supervisor \_\_\_\_\_:

**WHEREAS**, the Hampton Roads Regional Water Supply Plan, completed in July 2011 and approved by twenty-seven cities, counties and towns in Hampton Roads, points out that the Lake Gaston Project operated by the City of Virginia Beach is an important component of the Hampton Roads region's water supply; and,

**WHEREAS**, water demand projections indicate that the region's existing water sources, including Lake Gaston as an essential component, are adequate to meet the region's future water needs; and,

**WHEREAS**, during droughts, the Lake Gaston Project provides up to one-third of the water for the Norfolk, Virginia Beach and Chesapeake water systems including major military activities, and the loss of the Lake Gaston Project for an extended period of time could result in water shortages far greater than those experienced during the 1980-1981 drought; and,

**WHEREAS**, in 1982, the General Assembly enacted legislation prohibiting the mining of uranium in Virginia, and the issue was not revisited until 2007 when the price of uranium increased significantly, thus renewing the business interest in mining; and,

**WHEREAS**, since 2007, a series of studies has been completed by the National Academies of Sciences (NAS) at the request of the Virginia Coal and Energy Commission, by various private entities and by the City of Virginia Beach; and,

**WHEREAS**, two economic assessments of the proposed Coles Hill project found that one large, or several small, accidents or releases would significantly reverse the economic benefit of the project even if no serious harm to people of the environment occurred; and,

**WHEREAS**, the study by the NAS indicates that: (1) disposal cells in which radioactive tailings are stored represent significant long-term risks for radiological and other contamination; (2) limited data exist to confirm the long-term effectiveness of uranium tailings disposal cells; and (3) extreme natural events combined with human error have the potential to result in the release of contaminants if disposal cells are not designed, constructed or maintained properly, or if such cells fail to perform as envisioned; and,

**WHEREAS**, the NAS study concluded that the Commonwealth of Virginia has no experience with uranium mining, that the federal government has little or no experience applying existing laws and regulations to states with wet climates and extreme precipitation events and that there are gaps in legal and regulatory coverage for activities associated with uranium mining; and,

**WHEREAS**, it is acknowledged that if all of the tailings are secured in properly designed, constructed, and maintained below-grade disposal cells, the likelihood of a major release of tailings to surface water is significantly reduced; and,

**WHEREAS**, although existing regulations indicate that below-grade disposal of uranium tailings is preferable to above-grade disposal, exceptions have been made for environmental reasons, such as conflict with groundwater conditions, or for reasons of economic feasibility; and,

**WHEREAS**, the NAS study specifically dismissed the notion that below-grade disposal of tailings would automatically be required, noting that the first mine and mill permit to be issued in more than three decades allowed partially above-grade disposal cells, notwithstanding the fact that the safest and most environmentally sound solution was below-grade disposal; and,

**WHEREAS**, studies completed for the City of Virginia Beach evaluated the downstream water quality impacts of a hypothetical, catastrophic breach of a single, above-grade uranium mine tailings disposal cell located near Coles Hill; and,

**WHEREAS**, the City of Virginia Beach studies indicate that in the aftermath of an assumed catastrophe, radioactivity in the main body of Lake Gaston would remain above state and federal regulatory levels for up to two months during wet years and six to sixteen months during dry years; and,

**WHEREAS**, for a number of legal, regulatory, political, institutional and technical reasons, it is highly likely that a major release of tailings downstream from the Coles Hill site would force the City of Virginia Beach to discontinue pumping of the Lake Gaston Water Supply Project, at least until contaminant levels had dropped well below state and federal regulatory levels; and,

**WHEREAS**, a release of radioactive tailing such as that modeled in the Virginia Beach studies would have devastating adverse economic and other effects upon the City of Virginia Beach, the Hampton Roads region and the localities adjacent to and downstream of the Coles Hill site; and,

**WHEREAS**, operations vital to maintaining the nation's defense readiness at the military facilities located throughout Hampton Roads could be adversely impacted by water shortages that could result from a

significant release of tailings, especially during a dry period; and,

**WHEREAS**, even a release of radioactive tailings of lesser proportions than the worst case scenario modeled in the Virginia Beach study would result in serious economic impacts to those areas even after radioactivity levels declined to levels within legal limits because of the inevitability of negative public perceptions and the resultant damage to the region's images and reputations as attractive business and vacation destinations; and,

**WHEREAS**, it is absolutely clear, based upon the NAS and other studies, that it cannot be demonstrated to a reasonable degree of certainty that there would be no significant release of radioactive sediments downstream of the Coles Hill site; and,

**WHEREAS**, in 2012, the Governor convened the Uranium Mining Work Group to determine an appropriate regulatory framework governing uranium mining and to provide a report in advance of the 2013 Session of the General Assembly; and,

**WHEREAS**, while the probability of a major tailings release is small, the adverse consequences of such a release would be enormous and unacceptable.

**NOW, THEREFORE, BE IT RESOLVED**, that the Southampton County Board of Supervisors expresses its opposition to uranium mining and to the lifting of the moratorium on uranium mining which has been in effect since 1982.

Adopted this 26th day of November, 2012.

Seconded by Supervisor \_\_\_\_\_.

VOTING ON THE ITEM: YES –

NO –

A COPY TESTE:

\_\_\_\_\_  
Michael W. Johnson, County Administrator/  
Clerk, Southampton County Board of Supervisors

## A Summary of Key Findings from the National Academy of Sciences' report "Uranium Mining in Virginia" (Dec. 19, 2011)

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### INTRODUCTION:

- The National Academy of Sciences ("NAS") was prohibited from making any recommendation on whether to lift or keep the ban on uranium mining. Virginia's contract with the NAS stated that "the study will not make recommendations about whether or not uranium mining should be permitted nor will the study include site-specific assessments." (Report, at p. 23).
- Notwithstanding that limitation, the report did include important findings on questions of downstream impacts, water contamination, acid mine drainage, and regulatory shortcomings. These findings are summarized below.

### DOWNSTREAM IMPACTS:

- "Significant potential environmental risks are associated with extreme natural events and failures in management practices. Extreme natural events (e.g., hurricanes, earthquakes, intense rainfall events, drought) have the potential to lead to the release of contaminants if facilities are not designed and constructed to withstand such an event, or fail to perform as designed." (Report, at p. 145).
- "In a hydrologically active environment such as Virginia, with relatively frequent tropical and convective storms producing intense rainfall, it is questionable whether currently-engineered tailings repositories could be expected to prevent erosion and surface groundwater contamination for 1000 years" i.e., to the levels required by Nuclear Regulatory Commission Regulations, 10 CFR Part 40. (Report, at p. 153).

### THREAT OF WATER CONTAMINATION:

- "Because thorium-230 and radium-226 are present in mine tailings, these radionuclides and their decay products can—if not controlled adequately—contaminate the local environment under certain conditions, in particular by seeping into water sources.... This, in turn, can lead to a risk of cancer from drinking water ..." (Report, at p. 103).
- "The decay products of uranium provide a constant source of radiation in uranium tailings for thousands of years, substantially outlasting the current U.S. regulations for oversight of processing facility tailings." (Report, at p. 104).

## ACID MINE DRAINAGE (“AMD”):

- “Acid mine drainage (AMD) has the potential to be one of the most serious environmental problems caused by uranium mining in the Commonwealth of Virginia if it is not appropriately managed and mitigated.” (Report, at p. 147).
- “Problems with AMD are nearly ubiquitous in the literature for uranium mines around the world, including sites in Australia, Germany, Ontario, Canada, Saskatchewan, Canada, Portugal, and Brazil ...” (Report, at p. 147).

## REGULATORY SHORTCOMINGS:

- The U.S. “has only limited recent experience regulating conventional uranium processing and reclamation of uranium mining and processing facilities. Because almost all uranium mining and processing to date has taken place in parts of the United States that have a negative water balance (dry climates with low rainfall) federal agencies have limited experience applying laws and regulations in positive water balance (wet climates with medium to high rainfall) situations” as found in Virginia. (Report, at p. 179).

## OVERARCHING CONCLUSION:

- “If the Commonwealth of Virginia rescinds the existing moratorium on uranium mining, there are steep hurdles to be surmounted before mining and/or processing could be established within a regulatory environment that is appropriately protective of the health and safety of workers, the public, and the environment. There is only limited experience with modern underground and open pit uranium mining and processing practices in the wider United States, and no such experience in Virginia.” (Report, at p. 223).
- In presenting the report to the Virginia General Assembly on December 19, 2011, Paul Locke, Chair of the NAS Committee, stated:
  - “Internationally accepted best practices, which include timely and meaningful public participation, are available to mitigate some of the risks involved. However, there are still many unknowns. ... The report did not say you can mitigate all risks ... It said you can mitigate some risks.”



[www.keeptheban.org](http://www.keeptheban.org)



## Community Organization Statement of Support

*Keep the Ban on Uranium Mining in Virginia*

Virginia has a 30-year ban on the mining of uranium in the Commonwealth. The uranium industry is making a well-financed push to lift the ban so they can mine and process uranium, starting in Southside Virginia. Drinking water, human health, farmland, property values, wildlife and tourism across Virginia are at risk.

Radioactive and Toxic Waste: If the ban were lifted, processed uranium would be shipped out of state. Left behind for centuries would be huge volumes of radioactive and toxic waste, disposed near farmlands and local waterways.

Health Risks: Exposure to uranium waste has been linked to increases in leukemia, kidney disease and other severe health problems.

Downstream Impacts: A recent study predicts a spill at the first proposed mining site could contaminate drinking water for up to two years for Virginia Beach and other Virginia and North Carolina communities.

***Protect Our Health, Heritage and Future. Keep the Ban on Uranium Mining in Virginia.***

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[Contact Name]

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[Organization]

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[Address City, State Zip]

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[Email]

[Phone Number]

**RETURN TO:**

Keep the Ban c/o Virginia Conservation Network  
422 East Franklin Street, Suite 303  
Richmond VA 23219  
or email [vcn@vcnva.org](mailto:vcn@vcnva.org)



## KEEP THE BAN ON URANIUM!

Protect our heritage, our health and our future

Virginia has a nearly 30-year ban on uranium mining. Foreign-backed interests are trying to lift the ban so they can mine and process uranium, starting in Southside Virginia. Drinking water, human health, farmland, property values, wildlife and tourism across Virginia are at risk.

### WHAT YOU NEED TO KNOW

**Toxic waste will be left behind.** Toxic waste and radioactive contamination created by the extraction and processing of uranium has been linked to increases in leukemia, kidney disease, and other severe health problems. The first proposed site would generate up to 29 million tons of waste.

**Uranium has been found statewide.** The uranium industry held leases throughout the state in the 1980s. If the ban is lifted, it would be lifted statewide.

**Virginia's wet weather makes uranium production a risky experiment.** Uranium mining in the United States has primarily occurred in dry, sparsely populated regions of the arid Southwest. Severe weather events – like Tropical Storm Gaston, which dumped 14 inches of rain on Richmond – could overwhelm uranium operations.

**Drinking water for Virginia and North Carolina would be at risk.** A report by Virginia Beach, downstream of the Coles Hill site, warns that hurricanes “have generated extreme flooding east of the Blue Ridge Mountains along a corridor that cuts a path through the uranium ore deposits.” The Virginia Beach City Council has voted in support of keeping the ban.

A February 2011 Virginia Beach study finds that in the event of a catastrophic failure of a uranium tailings containment structure, radioactivity concentrations in the Roanoke River and Kerr Lake systems will exceed the Safe Water Drinking Act levels for an extended period of time.

**Our agricultural economy would be damaged.** The legacy of radioactive uranium mill tailings waste in the Dan River and Roanoke River basins, affecting Virginia and North Carolina, would taint our agricultural heritage for generations.

**Four studies are ongoing.** It is essential that Virginia wait until all of these studies have been completed and the public has the opportunity to review them.

#### For More Information Contact:

Dana Roberts  
Virginia Conservation Network  
804-644-0283  
dana@vcnva.org



# KEEP THE BAN ON URANIUM!

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## Keep the Ban on Uranium Mining & Processing in Virginia

Virginia has a nearly 30-year ban on uranium mining. Foreign-backed interests are trying to lift the ban so they can mine and process uranium, starting in Southside Virginia. Drinking water, human health, farmland, property values, wildlife and tourism across Virginia are at risk.

### Get the Facts on Uranium Mining & Processing

Radioactive and Toxic Waste: If the ban were lifted, processed uranium would be shipped out of state. Left behind for centuries would be huge volumes of radioactive and toxic waste, disposed near farmlands and local waterways. The Coles Hill Site alone would generate at least 28 million tons of waste.

Health Risks: Exposure to uranium waste has been linked to increases in leukemia, kidney disease and other severe health problems.

Downstream Drinking Water Impacts: A recent study predicts a spill at the first proposed mining site could contaminate drinking water for up to two years for Virginia Beach and other Virginia and North Carolina communities.

Virginia's wet weather makes uranium production a risky experiment: Uranium mining in the United States has primarily occurred in dry, sparsely populated regions of the arid Southwest. Severe weather events – like Tropical Storm Gaston, which dumped 14 inches of rain on Richmond – could overwhelm uranium operations.

Uranium has been found statewide: The uranium industry held leases throughout the state in the 1980s, including Occoquan River and Rappahannock River watersheds. If the ban is lifted, numerous communities could be at risk.

### I Am Concerned, What Can I Do?

Contact your state legislators: It is important to let your state senator and delegate know you care about this issue. Schedule a meeting, write a letter, or call your state legislators today.

Host an awareness event in your community: Knowledge is power. Inform your neighbors, coworkers, friends, family, and church about this issue by hosting a meeting at your home or other local location. Uranium mined in Virginia will be shipped out of state to be enriched. What will be left behind is radioactive waste that will have to be disposed of and managed for centuries.

#### For More Information Contact:

Dana Roberts

Virginia Conservation Network

804-644-0283

[dana@vcnva.org](mailto:dana@vcnva.org)



# KEEP THE BAN ON URANIUM!

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## How is Uranium Mined and Processed?

Virginia has a nearly 30-year ban on uranium mining. Foreign-backed interests are trying to lift the ban so they can mine and process uranium, starting in Southside Virginia. Drinking water, human health, farmland, property values, wildlife and tourism across Virginia are at risk.

### Uranium Mining

There are three main ways uranium ore can be extracted. All forms of mining create health risks for mine workers and the general public and may permanently damage the environment.

#### Open Pit Mining

Open pit mining is used to remove near-surface deposits and requires the removal of rock and soil to access the uranium ore. Open pit mining generates 40 tons of waste for each ton of ore. Mining companies are not required by law to contain and treat waste rock. Seepage from waste rock may contain traces of uranium, uranium by-products, heavy metals, and acids. Rainwater runoffs from open pit mines require the development of large evaporation ponds for storage and expensive treatment facilities for processing. Open pit mining also releases dust and emits radon gas, which can cause lung cancer if inhaled. These radioactive and toxic particulates can end up in waterways.

#### Underground Mining

Underground mines are created using a series of shafts and tunnels. Miners must go underground to build machinery and access the uranium ore. This exposes workers to high levels of radon. When water is present in large quantities, such as in the wet climate of Southside Virginia, the release of radon can be exacerbated, and surrounding rock can become unstable. Underground mining also causes soil subsidence and erosion that may affect neighboring properties.

#### In-Situ leaching (ISL)

ISL is a combined mining and processing technology. A mix of chemicals is injected into the earth through a series of patterned holes. These chemicals separate the uranium ore from surrounding rock, and the mixture is recovered for further processing<sup>1</sup>. Once underground, this chemical solution can leach into surrounding groundwater. A long, expensive process is necessary to restore the aquifer.

### Uranium Processing (Milling)

Once uranium ore is extracted from the ground, it must be processed into a usable form called yellowcake. Processing is commonly referred to as 'milling'. The uranium ore is crushed and infused with a liquid chemical solution that requires large quantities of water. The chemical solution separates the usable element of uranium from the unusable waste. The usable element is sent to an enrichment facility to be turned into fuel pellets. There are no enrichment facilities in Virginia.

Uranium mined in Virginia will be shipped out of state to be enriched. What will be left behind is radioactive waste that will have to be disposed of and managed for centuries.

<sup>1</sup> Edward T. Habib, Jr. In Situ Leaching of Uranium. Mobil Oil Co., assignee. Patent. 4,185,872. 29, Jan, 1980.



# KEEP THE BAN ON URANIUM!

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## Health Hazards of Uranium Waste

Virginia has a nearly 30-year ban on uranium mining. Foreign-backed interests are trying to lift the ban so they can mine and process uranium, starting in Southside Virginia. Drinking water, human health, farmland, property values, wildlife and tourism across Virginia are at risk.

Uranium mining and processing produce waste material commonly referred to as "tailings" that would put the health of Southside Virginia and downstream communities at risk. This toxic waste retains significant amounts of uranium as well as by-products, such as radium and thorium, heavy metals including lead, arsenic, and mercury, and other toxic materials. While independent researchers continue to determine the full effects, studies have linked exposure to uranium waste to negative impacts on human health<sup>1</sup>.

- Exposure to uranium waste has been linked to cancer and respiratory diseases and can exert toxic effects on kidney function, bone development, and the formation of blood cells<sup>2</sup>.
- The radioactive chemical element radium is found in uranium waste. Radium decays into the radioactive gas radon, which is difficult to contain. If ingested, it may increase the risk for bone, liver, lung and breast cancer<sup>1</sup>.
- African Americans may be more vulnerable to the biological effects of uranium. African American women in particular have shown an increased risk for breast cancer due to elevated uranium concentration in groundwater<sup>3</sup>.
- Babies from mothers who had prolonged exposure to uranium waste in Church Rock, New Mexico, suffered a significant increase in birth defects<sup>4</sup>.

The Coles Hill site alone would generate at least 28 million tons of uranium waste. Uranium waste remains radioactive for thousands of years and needs to be contained on-site indefinitely. A uranium mill waste containment failure at Coles Hill could result in the contamination of local groundwater sources and downstream drinking water sources for over 1.9 million people in Halifax, Virginia Beach, Norfolk, Chesapeake and North Carolina<sup>1</sup>.

### References:

1. Michael Baker, Jr., Engineers Inc. "Uranium Mining in Virginia – Can Downstream Drinking Water Source be Impacted?" Mar. 2010.
2. Wagner, Sara E., et al. "Hypertension and Hematologic Parameters in a Community near a Uranium Processing Facility." *Environmental Research* 110 (2010): 786-97.
3. Wagner, Sara E et al. "Groundwater Uranium and Cancer Incidence in South Carolina." *Cancer Causes Control* 22 (2011): 41-50
4. Shields, L. M et al. "Navajo Birth Outcomes in the Shiprock Uranium Mining Area." *Health Physics* 63.5 (1992): 542-51.



# KEEP THE BAN ON URANIUM!

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## Downstream Impacts of Uranium Mining & Processing from Coles Hill Site

Virginia has a nearly 30-year ban on uranium mining. Foreign-backed interests are trying to lift the ban so they can mine and process uranium, starting in Southside Virginia. Drinking water, human health, farmland, property values, wildlife and tourism across Virginia are at risk.

### Virginia Beach Study - Virginia's Wet Weather Makes Mining a Risky Experiment.

On February 1, 2011, the Virginia Beach Department of Public Utilities released the findings of a uranium mining impact study concluding Virginia Beach's drinking water is at risk. Pittsylvania County is vulnerable to extreme rainfall events capable of generating substantial flooding. Such events could cause the failure of uranium waste containment structures and result in the contamination of the downstream drinking water supplies for Virginia Beach and other Virginia and North Carolina communities.

### Virginia and North Carolina Drinking Water Supplies At Risk.

This study shows that if a major waste spill occurred, contaminants would flow from the Bannister River to Kerr Reservoir and Lake Gaston. This would raise the radiation level in Kerr Reservoir 10-20 times above the level outlined in the Safe Drinking Water Act. Radioactive contaminants would take two months to two years to flush out of Lake Gaston. Impacts to Kerr Reservoir would be much more significant and long lasting.

Kerr Reservoir is the primary drinking water source for Halifax County, Clarksville, Mecklenburg and Brunswick Counties, as well as downstream communities in North Carolina. Lake Gaston is the drinking water source for Virginia Beach, Norfolk, and Chesapeake City.

### Downstream Communities Support the Ban on Uranium Mining

As a result of the study, Virginia Beach City Council maintained its resolution opposing uranium mining in Virginia. Chesapeake's City manager has also stated support of the existing ban.

