

URANIUM IN VIRGINIA?

Let's set the record straight

For 30 years, Virginia has maintained a statutory ban prohibiting uranium mining. In 2012, the General Assembly may be asked to lift that ban and allow uranium mining and radioactive waste disposal in our Commonwealth.

The National Academy of Sciences has been studying the issue but will not complete its project—which includes extensive outreach and public meetings—until after the General Assembly adjourns.¹

Virginia Uranium, Inc. (VUI), which is currently focused on a uranium deposit in Pittsylvania County (the “Coles Hill” site), is spending over \$600,000 on lobbying efforts² that are obscuring the truth—at times making contradictory claims to different audiences. Below are some questions and answers to set the record straight.

ENERGY INDEPENDENCE

Q: Would uranium mining in Virginia provide fuel to Virginia’s nuclear reactors?

A: No. VUI is not proposing to produce nuclear fuel in Virginia. If uranium is mined and milled here, the resulting “yellowcake” would have to be shipped out-of-state to be processed into fuel.³ What would be left behind in Virginia is the waste, known as tailings. These tailings retain about 85 percent of their original radioactivity.⁴ Ultimately, this issue is about whether to allow the disposal of toxic and radioactive waste in our Commonwealth.

Q: Don’t we currently rely on hostile nations for the majority of our uranium?

A: No. According to the U.S. Department of Energy, Australia has the most reasonably assured uranium resources of any country in the world—more than the next three countries combined.⁵ Canada is second on the list. A recent *New York Times* report quoted a nuclear fuel business consultant as stating that: “We’ve got 100 years of high-enriched uranium in storage,’ and with additional material coming out of uranium weapons, there is enough ‘probably for 1,000 years of whatever naval fuel we need.’”⁶

WATER QUALITY

Q: Are there real-world examples of ground-water contamination from uranium mining?

A: Yes. In the western U.S., uranium mining has resulted in long-term environmental contamination leading to more than \$2 billion in remediation costs.⁷ One uranium mill in Colorado has been leaking for 30 years, despite repeated efforts to address the problem.⁸ It was declared a Superfund site in the 1980s, but a 2004 report found that it continues to release “millions of gallons of leachate [polluted water] into the environment each year;” clean-up is estimated to cost anywhere from \$50 million to \$500 million.⁹ Despite these unresolved problems, the uranium industry is now applying to re-open this mill.



Q: The National Academy of Sciences visited mines in Canada. Are there problems there?

A: Yes. Even the Canadian mines spotlighted by VUI have suffered significant problems. In 1989, a leak at a mine in Saskatchewan released more than 500,000 gallons of contaminated wastewater into the environment. Another 500,000 gallon spill occurred at Elliot Lake in Ontario in 1993.¹⁰ As recently as 2006, flooding overwhelmed a site in Saskatchewan, raising “questions for some analysts about whether [the mining company] could devise plans to prevent future floods...”¹¹

Q: Are there any examples of a mine similar to VUI’s proposal close to Virginia?

A: No. Open-pit or underground uranium mining (as proposed by VUI) has never been conducted east of the Mississippi River.¹² VUI, however, points to Florida, where uranium has been extracted as a by-product of phosphate mining. The comparison is not reassuring. The industry in Florida left behind “1 billion tons ... of radioactive waste,” leading to millions of dollars in taxpayer-funded clean-up costs.¹³ Linda Young, with the Clean Water Network of Florida, warns: “I would say to the people of Virginia: Be very afraid. I can’t imagine how uranium mining would turn out well. All the waterways around [waste disposal sites] here are polluted.”¹⁴

Q: But hasn’t uranium been mined safely in France?

A: No. Although VUI has paid for legislative trips to France, the company has failed to tell the whole story. French authorities assembled a group of experts to study the legacy of uranium contamination. The group concluded problems still persist. The laboratory for CRIIAD (Commission de Recherche et d’Information Indépendantes sur la Radioactivité), a non-governmental organization, also found evidence of contamination at every uranium mine it studied. Samples taken downstream from one French mine showed radioactive contamination more than a quarter-century after the mine closed.¹⁵

Q: Does uranium mining and waste disposal really pose a threat to our drinking water in Virginia?

A: Yes. The City of Virginia Beach retained a global engineering firm, the Michael Baker Corporation, to research whether mining at Coles Hill could contaminate water supplies in the event of a natural disaster, such as a hurricane. The threat is real. According to data from the National Oceanic and Atmospheric Administration, 78 hurricanes have impacted Virginia over the last 101 years. The Baker report concluded that a catastrophic failure of a waste disposal facility could lead to radioactivity in the river/reservoir system 10-20 times greater than what is allowed by the Safe Water Drinking Act.¹⁶

ECONOMIC DEVELOPMENT

Q: Won’t the Coles Hill project be a boon to Southside Virginia?

A: No. Peer-reviewed research and government reports confirm that populations living near uranium mines or mills may be exposed to higher levels of uranium in drinking water and locally grown foods.¹⁷ Higher rates of childhood leukemia, respiratory disease and kidney disease have also been recorded in areas close to uranium mines.¹⁸ A New Mexico study found elevated uranium levels in cattle grazing near mining and milling sites.¹⁹ Southside’s agriculture sector, valued at \$303 million in 2007, would be threatened.²⁰ Property values could fall.



Q: Won't the project at Coles Hill provide net increases in tax revenues?

A: No. The jobs at Coles Hill could generate \$1.7 million per year in state and local taxes,²⁰ but this is dwarfed by the potential costs of uranium waste management. As noted above, remediation of contaminated sites in Colorado cost up to \$500 million each.²¹ The clean-up of one spill in Florida cost taxpayers \$144 million.²² After exhausting a special reclamation fund, the Florida Department of Environmental Protection sought \$12 million annually from the state's general fund to pay for the mess.²³ And these figures do not even account for increased public health costs.

Q: What about the impact on Hampton Roads, downstream from Coles Hill?

A: The Navy contributes almost \$13.5 billion to the economy of Hampton Roads yearly.²⁴ All of the military bases in Hampton Roads rely on public water supplies that are downstream from Coles Hill. A catastrophic event, such as that modeled by the City of Virginia Beach, would pose a risk to our military personnel and their families. According to Capt. Joe Bouchard, U.S. Navy (ret.), former commander of the Norfolk Naval Station, "National security risks are profound with this project and cannot be ignored."²⁵

STATEWIDE IMPACT

Q: This issue is specific to Southside, isn't it?

A: No. Speaking to foreign investors in February 2011, a VUI executive explained: "Talking to the lead geologist, he's insistent to this day that Coles Hill is the first of more major discoveries in Virginia ..."²⁶ But that's not what the company is telling home-state legislators; a VUI flyer misleadingly claims that "Coles Hill is the only deposit in Virginia worth mining." Yet in the 1970s and 80s, exploratory leases (now expired) were in obtained Pittsylvania, Madison, Culpeper, Orange, and Fauquier counties.

Q: Since uranium mining and waste disposal could affect communities throughout Virginia, have localities weighed in on the issue?

A: Yes. Since 2007, dozens of local governments in Virginia and North Carolina have passed resolutions in support of keeping the ban. These include: (1) the cities of Chesapeake, Charlottesville, Roanoke, and Virginia Beach; (2) the counties of Floyd, Halifax, Mecklenburg, Orange, Patrick, and Rappahannock; and (3) the towns of Clarksville, Halifax, Hurt, and South Boston. In addition, the Virginia Municipal League, the Bi-State Commission on the Roanoke River Basin, and the Virginia State Conference of the NAACP have adopted positions to oppose uranium legislation in 2012. The Virginia Farm Bureau supports keeping the ban until after the studies have been thoroughly evaluated.





Southern
Environmental
Law Center

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Environmental Law Center
on behalf of the Keep the
Ban Coalition



Cale Jaffe, Southern Environmental Law Center
434-977-4090, cjaffe@selcva.org

Mary Rafferty, Sierra Club, Virginia Chapter
804-225-9113, mary.rafferty@sierraclub.org

Lisa Guthrie, Virginia League of Conservation Voters
804-225-1902, virlcv@aol.com

Dan Holmes, Piedmont Environmental Council
571-213-4250, dholmes@pecva.org

KeepTheBan.org

¹ The National Academy of Sciences contract with Virginia requires “a 5-month period after public release and delivery of the report in prepublication form [in December] to allow for ... extensive public outreach that will include public meetings in Virginia to disseminate the report’s findings.”

² Campaign Contributions to State Legislators, 2007-2011: \$151,650 (source: www.vpap.org); Lobbyist Expenses, 2007-2010: \$267,146 (source: <http://www.commonwealth.virginia.gov/stategovernment/lobbyist/database.cfm>); Gifts and Travel, 2010: \$27,488 (source: www.vpap.org); Travel to France for 14 Legislators in 2011: Costs not disclosed, but based on average of \$9,139 per trip (as disclosed for 2010 trips), estimated at \$127,950; Lobbyist Expenses, 2011: Costs not disclosed, but based on average of prior years, estimated at \$89,048. Total lobbying related expenses: \$663,282.

³ The closest facility is one owned by the U.S. DOE in Paducah, Kentucky. Fuel from that DOE plant is sent to commercial nuclear customers all over the world. See “Overview: Paducah Gaseous Diffusion Plant”, http://www.usec.com/gaseousdiffusion_pad_overview.htm.

⁴ Michael Baker Corp., *A Preliminary Assessment of Potential Impacts of Uranium Mining in Virginia on Drinking Water Sources, Final Report*, at ES-2 (Revised Feb. 22, 2011), available at http://www.vbgov.com/government/departments/public-utilities/Documents/04.UraniumMiningReport_Final_Updated20110222_V2.pdf.

⁵ Scott Sitzler, U.S. Department of Energy, Energy Information Administration, “The Uranium Market: A National and Global Perspective,” Presentation to National Resource Council Committee on Uranium Mining in Virginia,” (Oct. 27, 2010).

⁶ Matthew Wald, “Loan Request by Uranium-Enrichment Firm Upends Politics as Usual,” *New York Times* (Nov. 24, 2011).

⁷ Robert E. Moran, Michael-Mann Associates, LLC, “Site Specific Assessment of the Proposed Uranium Mining and Milling Project at Coles Hill, Pittsylvania County,” prepared for Roanoke River Basin Association (Nov. 17, 2011).

⁸ Karen Crummy, “Cotter mill’s ties to Colorado regulators may have become toxic,” *Denver Post*, (Oct. 23, 2011).

⁹ *Id.*

¹⁰ Matt James, “Uranium Mines Have Troubled Past,” *The Napanee Guide* (Napanee, Ontario) available at <http://www.napaneeguide.com/ArticleDisplay.aspx?e=702120&archive=true>.

¹¹ Michael Knapik, “Cigar Lake Flood Propels Spot Price Closer to \$70/lb,” *Nuclear Fuel (Platts)* Vol. 31, No. 23 (Nov. 20, 2006).

¹² Statement of Professor Robert J. Bodnar, Virginia Tech, Garden Club of Virginia Forum on Uranium Mining (Nov. 3, 2011).

¹³ Editorial, “An Immovable Beast,” *Sarasota Herald-Tribune*, at A8 (May 29, 2002).

¹⁴ R. Ellen O’Connor, “Uranium Mining – The Virginia Battleground – Environmental Concerns vs. Corporate Interests Part Two,” *Natural Resources News Service* (Nov. 23, 2011).

¹⁵ Report of the Groupe D’Expertise Pluraliste (“GEP”), Executive Summary, (Sept. 2010), available at http://www.gep-nucleaire.org/gep/sections/travauxgep/rappports/executive_summary/downloadFile/file/Executive_summary_Miseenligne_17.09.10.pdf. Bruno Chareyron, CRIIRAD, “Radiological Hazards from Uranium Mining,” at http://www.pecva.org/anx/ass/library/335/criirad_eng.pdf.

¹⁶ Michael Baker Corp., *supra* note 4.

¹⁷ Brugge D, de Lemos JL, and Oldmixon B. 2005. Exposure Pathways and Health Effects Associated with Chemical and Radiological Toxicity of Natural Uranium: A Review. *Reviews on Environmental Health* 20: 177-193. See also Agency for Toxic Substances and Disease Registry (ATSDR). 2011. Draft Toxicological Profile for Uranium.

¹⁸ Brett Bunkall, “The Uranium Mining and Milling Industry in Utah.” 26 *J. Land Resources & Env’tl. L.* 375 (2006).

¹⁹ Brugge D, *supra* note 17.

²⁰ USDA National Agricultural Statistics Service, 2007 Census of Agriculture: Virginia County Profiles, at http://www.agcensus.usda.gov/Publications/2007/Online_Highlights/County_Profiles/Virginia/index.asp.

²¹ Evan Feinman, Commonwealth Institute for Fiscal Analysis (July 5, 2011) (excludes income from permit fees or corporate income taxes) (assumes VUI projections of 300+ jobs at an average salary of \$65,000 per year).

²² Karen Crummy, *supra* note 8.

²³ Kate Spinner, “Environmental scourge recast as economic asset,” *Sarasota Herald Tribune*, at A01 (January 6, 2011) (excludes costs for establishing and maintaining a state regulatory program for permitting and enforcement).

²⁴ Victor Hull, “Cleanup Funds Running Short,” *Sarasota Herald-Tribune*, at BS1 (Mar. 17, 2004).

²⁵ Hampton Roads Planning District Commission, “U.S. Navy’s Economic Impact on Hampton Roads,” at <http://hrpdcva.gov>.

²⁶ Scott Harper, “Supporters, Critics of Uranium Mining Face Off,” *The Virginian-Pilot* (Nov. 4, 2011).

²⁷ Walter Coles, Jr., “Building North America’s Uranium Supply,” Americas’ Resources Investment Congress, London, U.K. (Feb. 1, 2011).