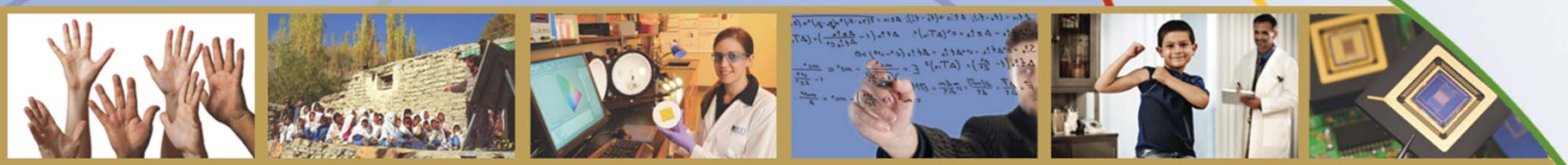
Proposed Coles Hill Uranium Mine and Mill

An Assessment of Possible Impacts

March 20, 2012



About RTI International

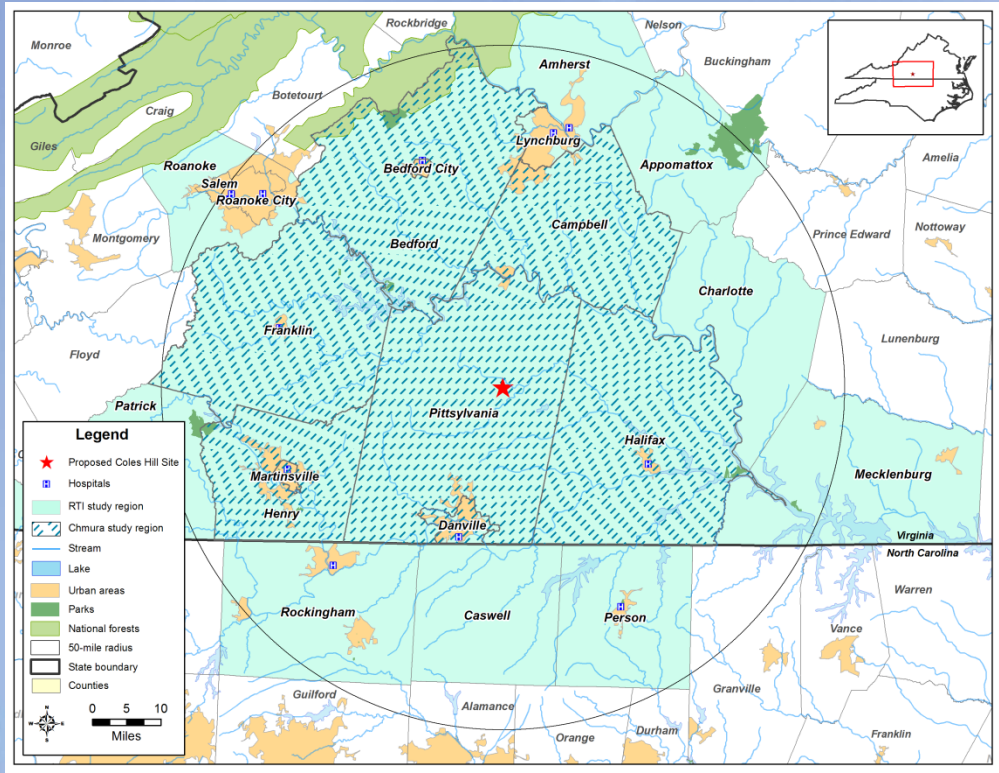
- Independent, nonprofit research and development organization
- Founded in 1958 through a partnership between business leaders, state government and area universities
- Mission: to improve the human condition by turning knowledge into practice

RTI Study Purpose and Scope

- Independent, objective assessment of potential impacts of the proposed mining and milling operation on the surrounding region
  - A range of scenarios and assumptions
  - Comparison with similar mining operations elsewhere

- Specifically, we assessed likely impacts on:
  - Economy and employment
  - Environmental quality
  - Community well-being
  - Government revenues and the demand for public/government services
  - Competitiveness of the region

RTI Study Region – 50 Mile Radius of Coles Hill



12 Virginia counties; six independent cities

3 North Carolina counties

Chmura study area: six Virginia counties, three independent cities

Our Approach

- Well-established economic & environmental methods
- Engaged local/regional stakeholders in data collection
  - Formed a community advisory panel
  - Included experts, average citizens
  - Used focus groups to assess community values, issues and concerns

Key Findings

- The proposed mine and mill could add more than 700 jobs and $150 million economic impact to the region's economy per year during peak operation
- Local and state revenues from facility operations are expected to cover the costs of required additional government services
- Even if fully compliant with expected environmental regulations, there would be measurable contamination, especially close to the facility
- Groundwater levels near the facility would be lowered, impacting local wells, springs
- Design of facility, including tailings management, is critical to limiting environmental impacts
- Within the region, both economic and environmental impacts would vary geographically

Regional Economic Impacts

- Annual economic impacts, years 1-21
  - Best case: 889 jobs; $220 million impact
  - **Reasonable: 724 jobs; $162 million impact**
  - Worst case: 385 jobs; $81 million impact
- Additional impacts (construction)
  - Roughly 550 to 1000 employees
  - Adds between $70 million and $138 million
- Increased disposable income locally
- Development of uranium “cluster”?

Basis for Estimate

- Virginia Uranium Inc. estimates 3,000 ton per day ore production
  - = 324 employees (224 at the mine; 100 at the mill)
  - = $46 million annually on labor and materials
- Virginia Uranium Inc. plans to hire locally
  - Specialized training and licensing required for miners
  - Construction, ramp up provides time for training workers
- No significant influx of workers, or a large population increase

Impacts on State and Local Governments

- No significant impact on schools, medical care, other services
- State and local governments would have additional responsibilities:
  - State: regulatory mechanisms, incident response, including impacts to transportation involving shipments
  - Local: emergency preparedness planning and training
- State and local revenues would increase by $11 million under the main scenario
- Costs expected to be covered by taxes and other fees*

Assumes facility operations are fully compliant and that it has a good safety record.

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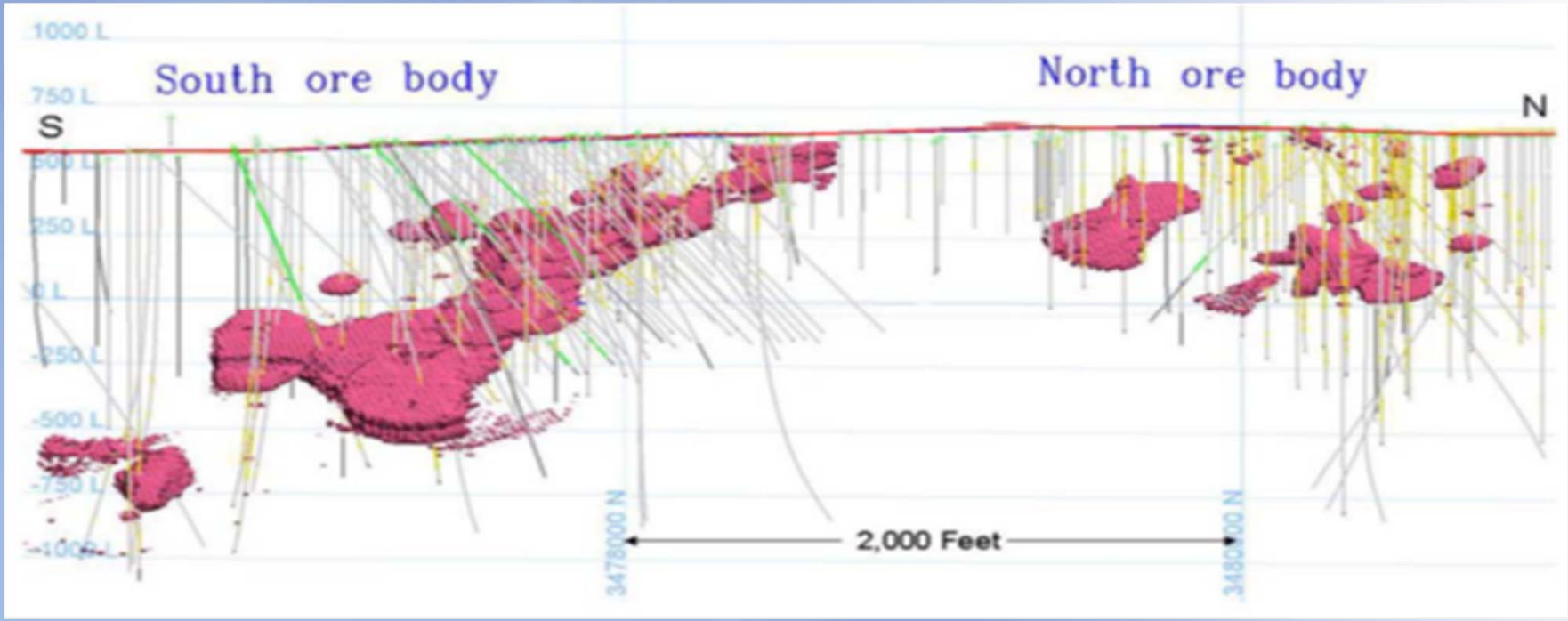
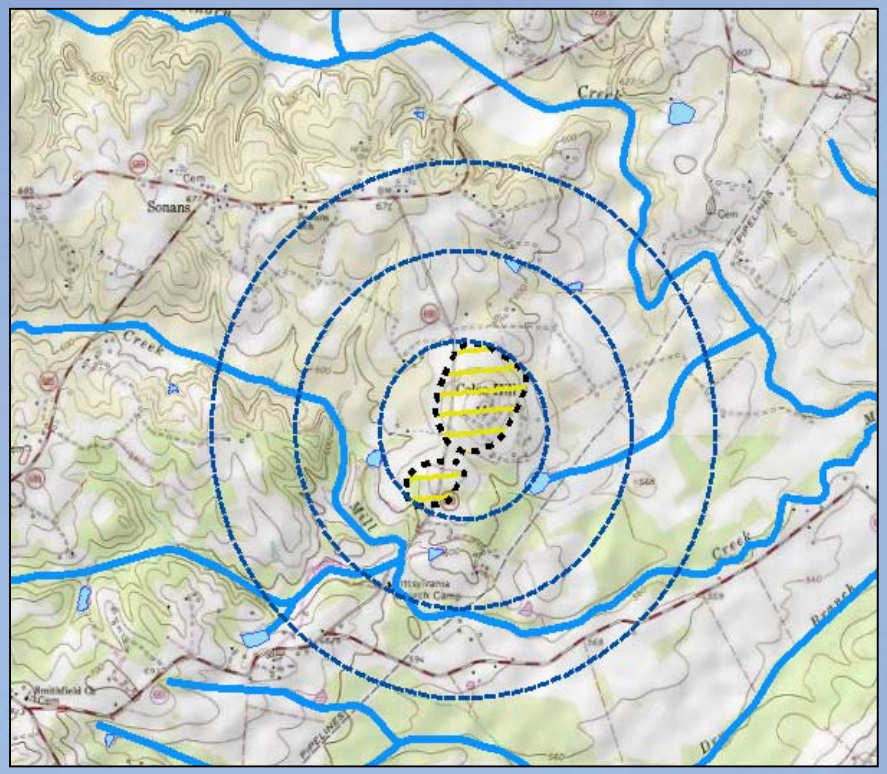
The Ore Deposit (VUI Scoping Study)



Environmental Impacts



Groundwater and Surface Water

Mine dewatering will affect groundwater levels. Site must be designed and operated to limit potential contamination

Storm water

Runoff and flooding may carry pollutants to streams; area prone to significant rain events

Tailings

Will remain radioactive for thousands of years; ongoing containment and isolation are critical

Mitigating Environmental Impacts

White Mesa Mill, Utah

- Assess baseline conditions to accurately measure impacts
- Design facility properly
- Use modern technology
- Implement best practices, with a constant focus on pollution prevention
- State must adopt rigorous regulatory, monitoring, and compliance program
- Develop effective restoration and tailings management plan

Overall Quality of Life Impacts

- Adverse environmental impacts would be greatest close to the facility, downwind and downstream, but they would be small if mine and mill meet regulatory standards
- Positive employment impact focused within commuting distance
- Increased incomes—more opportunities and amenities in the region
- Perception of region has potentially broader impact

Community "Stigma," Perception of Risks

MacArthur River Mine, Canada

- Perceived risk can negatively effect region's image
- Transparency, community involvement can reduce unfounded concerns
- Communities near existing mines and mills have concerns, but generally express no adverse impacts on their reputation or on tourism and economy; data generally support this, although we don't know how things would have been without the mine and mill*
- **** We found no communities near existing operations that were as densely populated, economically diverse or dependent on water resources.***

Impact on Regional Competitiveness

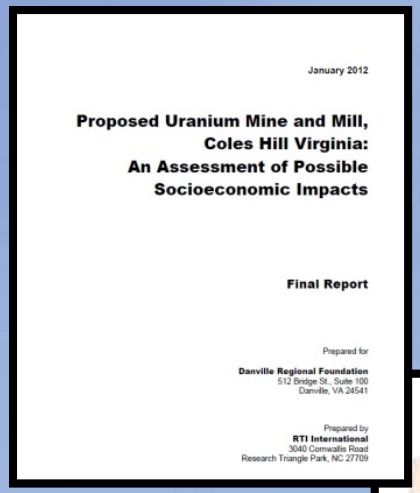
Provided the facility is appropriately regulated, operated, and monitored – and results of monitoring are publicized…

- Transportation, access to health care, schools largely unaffected
- Increased incomes and opportunities in the region may improve ability to retain workers
- May not significantly reduce regional competitiveness
- Housing demand could increase; within a mile or two of the site, property values are likely to decrease

Study Limitations

- Assessment is based on best available information, but many unknowns
- We found no similar facility/community that accurately illustrates risks or benefits
- Economic assumptions based on market price for uranium, local share of spending, safety reputation
- Detailed plans for mining and milling operations have not yet been developed
- Regulatory requirements have not been developed
- Detailed site characterization is required to accurately assess environmental and human health impacts

Why Do Study Findings Differ?


January 2012

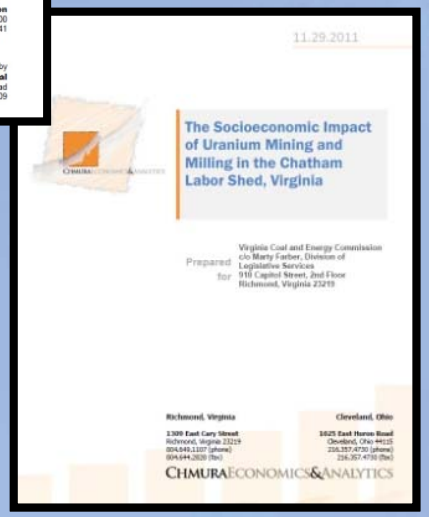
Proposed Uranium Mine and Mill, Coles Hill Virginia: An Assessment of Possible Socioeconomic Impacts

Final Report

Prepared for

Danville Regional Foundation
512 Bridge St., Suite 100
Danville, VA 24541

Prepared by
RTI International
3040 Cornwallis Road
Research Triangle Park, NC 27709


11.29.2011

The Socioeconomic Impact of Uranium Mining and Milling in the Chatham Labor Shed, Virginia

Prepared for
Virginia Coal and Energy Commission
c/o Marty Farber, Division of Legislative Services
910 Capitol Street, 2nd Floor
Richmond, Virginia 23219

Richmond, Virginia
1309 East Cary Street
Richmond, Virginia 23219
804.649.1107 (phone)
804.644.2828 (fax)

Cleveland, Ohio
1625 East Huron Road
Cleveland, Ohio 44115
216.357.4730 (phone)
216.357.4731 (fax)

CHMURAECONOMICS&ANALYTICS

- Generally, approaches were similar and findings are consistent
- Studies had a slightly different geographic scope
- Used the same economic model, but used different sectors to represent uranium mine/mill
- Used different data to calculate tax revenue (total impact vs. direct impact only)
- Each team developed scenarios to illustrate impacts under a range of assumptions
- RTI environmental impacts based on site-specific modeling

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Unanswered Questions

- Our study is based on limited information; we don't know what would actually happen in the future
  - How much water would have to be pumped out to safely mine the uranium?
  - What would the regulations and permits look like?
  - Would the mine and mill comply with regulations and operate safely?
- Our study is also based on compliance with appropriate regulation. One large, or several small accidents/spills would significantly change the outcome, affecting the area's reputation even if no serious harm to people or the environment occurred

For more information

- Project website
  - Full report including appendices (500 pages)
  - Executive summary (30 pages)
  - Non-technical summary (10 pages)
  - This presentation and handout
- https://coleshillimpacts.rti.org

Questions