

Energy Innovation and the Legacy of the 1970s

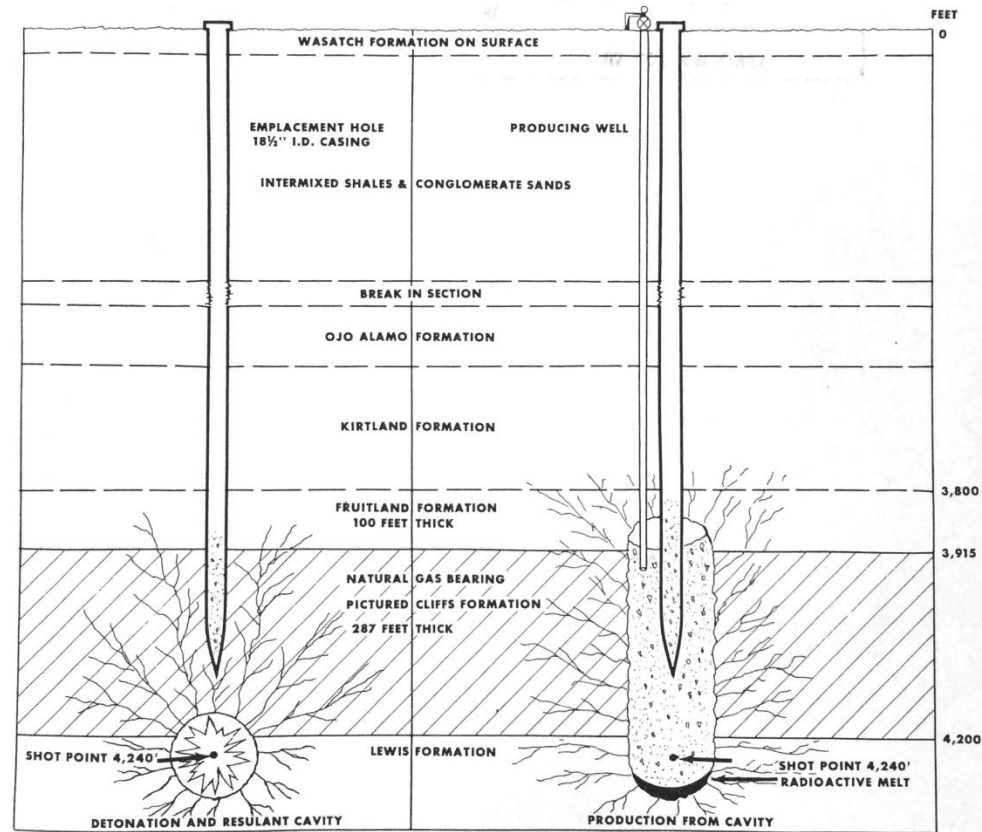
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October 3, 2024

Nuclear fracking (nuclear “stimulation” of gas production): Project Gasbuggy (1967)



Project Gasbuggy (1967)

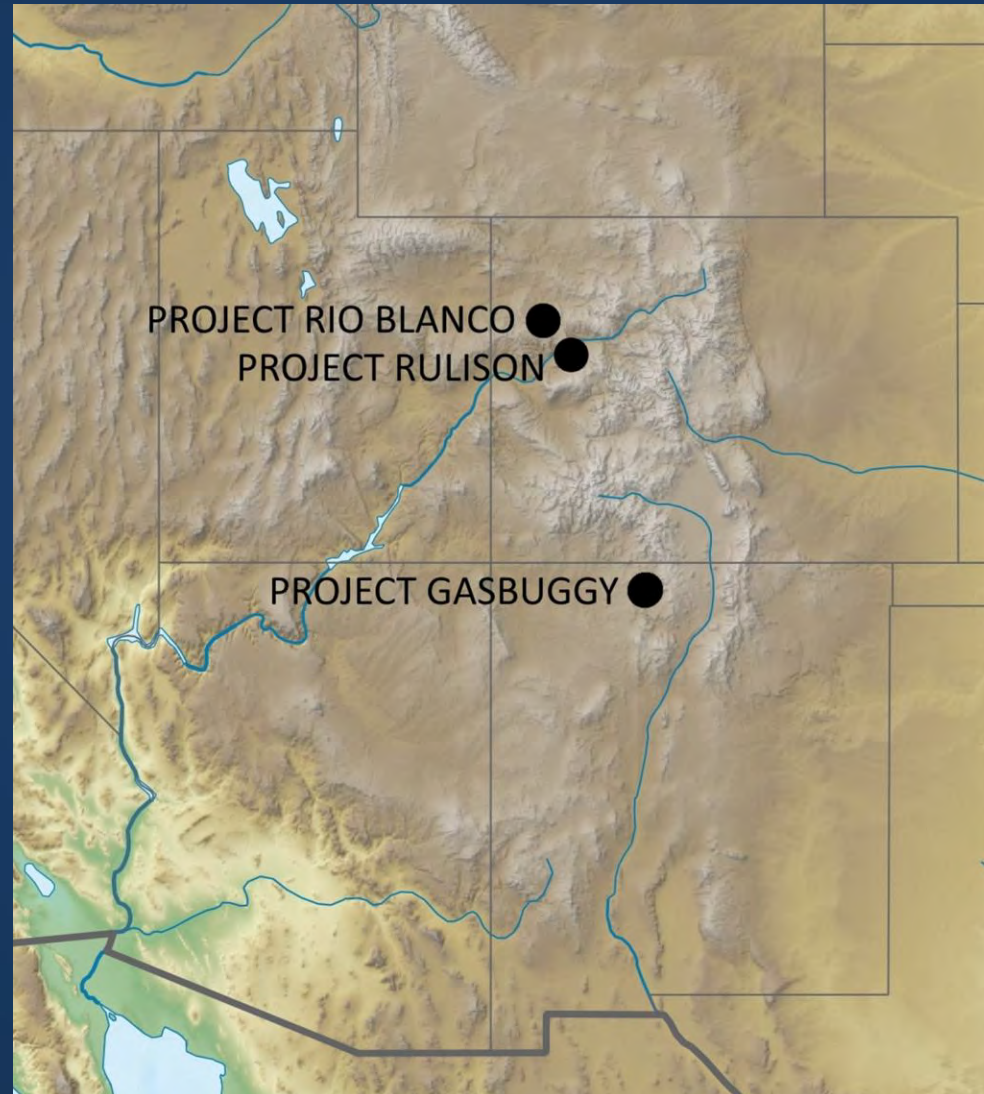
PROJECT GASBUGGY PREDICTED UNDERGROUND EFFECTS



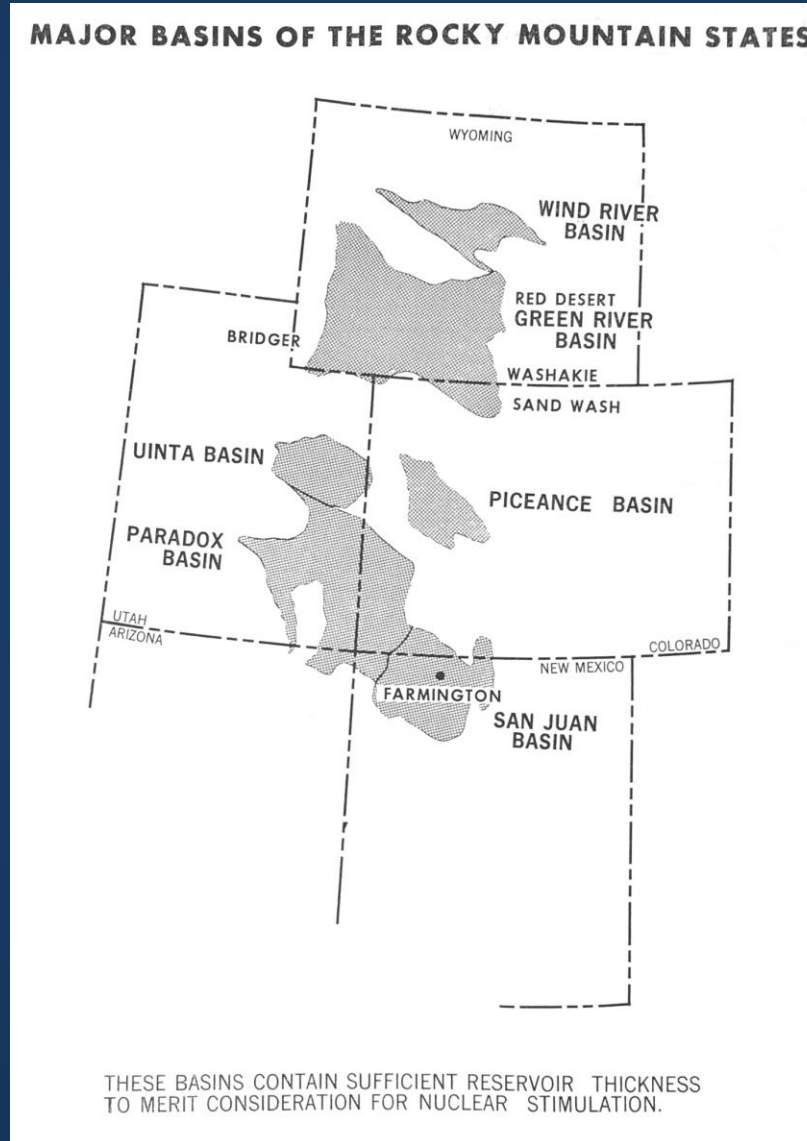
DATA:

- CAVITY DIAMETER 160 FEET
- CHIMNEY DIAMETER 160 FEET
- CHIMNEY HEIGHT 350 FEET
- TOTAL LATERAL FRACTURING (DIAMETER) 850 FEET
- TOTAL VERTICAL FRACTURING (TOP TO BOTTOM) 430 FEET

Nuclear gas stimulation experiments 1967-73

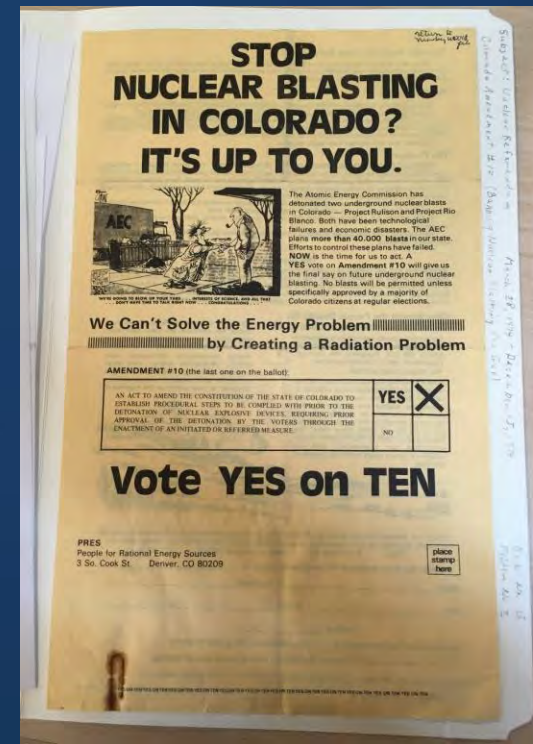


Anticipated production areas: Up to 30,000 nuclear explosives planned



Nuclear fracking is abandoned after 1973

- High costs
- Gas contamination and seismic dangers
- Local opposition



Wagon Wheel nuclear fracking site c. 1972



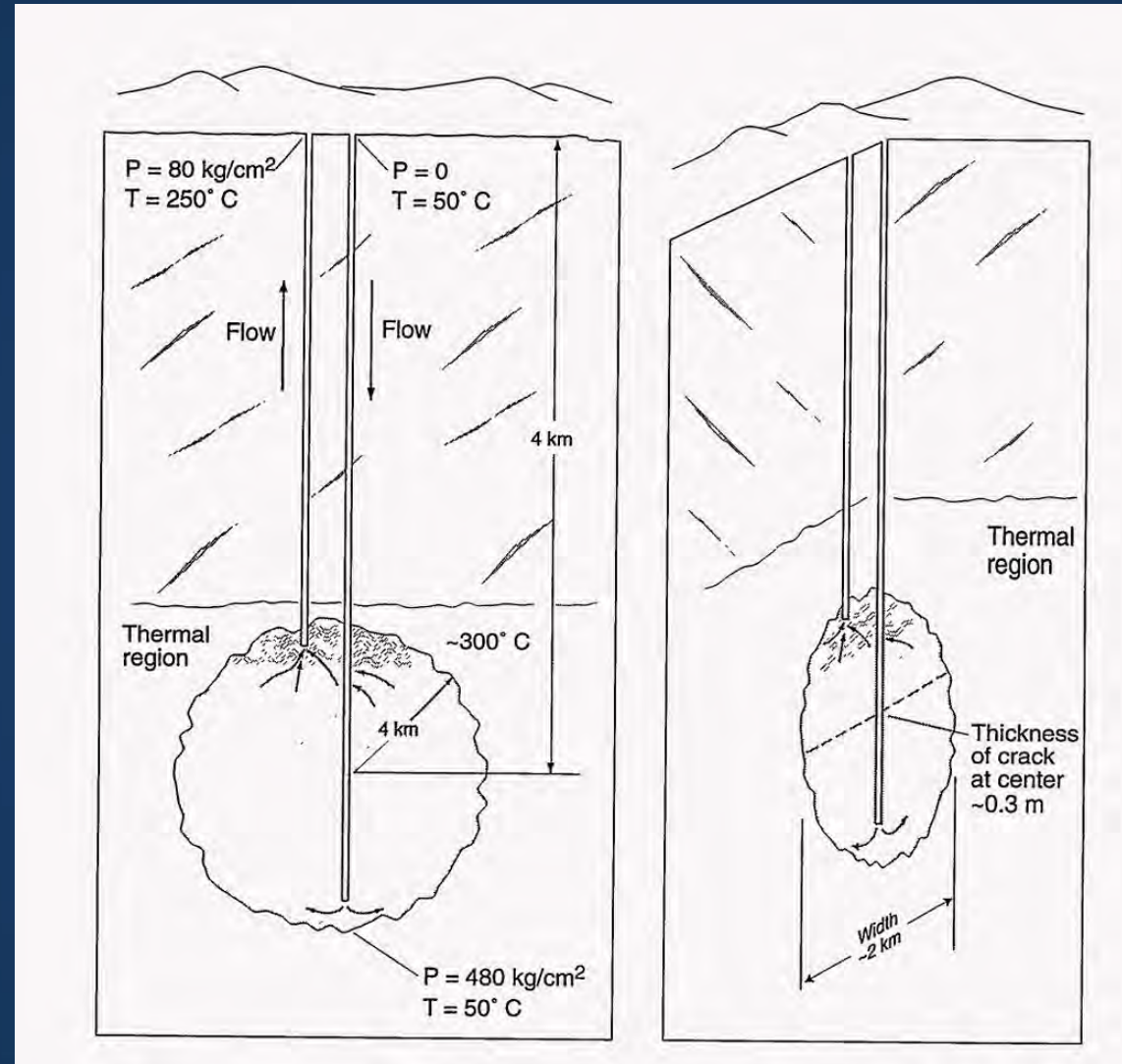
Source: *Wagon Wheel Gas Stimulation Project: Environmental Statement* (U.S. Atomic Energy Commission, 1972), p. 3.3

Wagon Wheel test site, September 2021



Photo by author

Los Alamos National Laboratory enhanced geothermal proposal (1971)

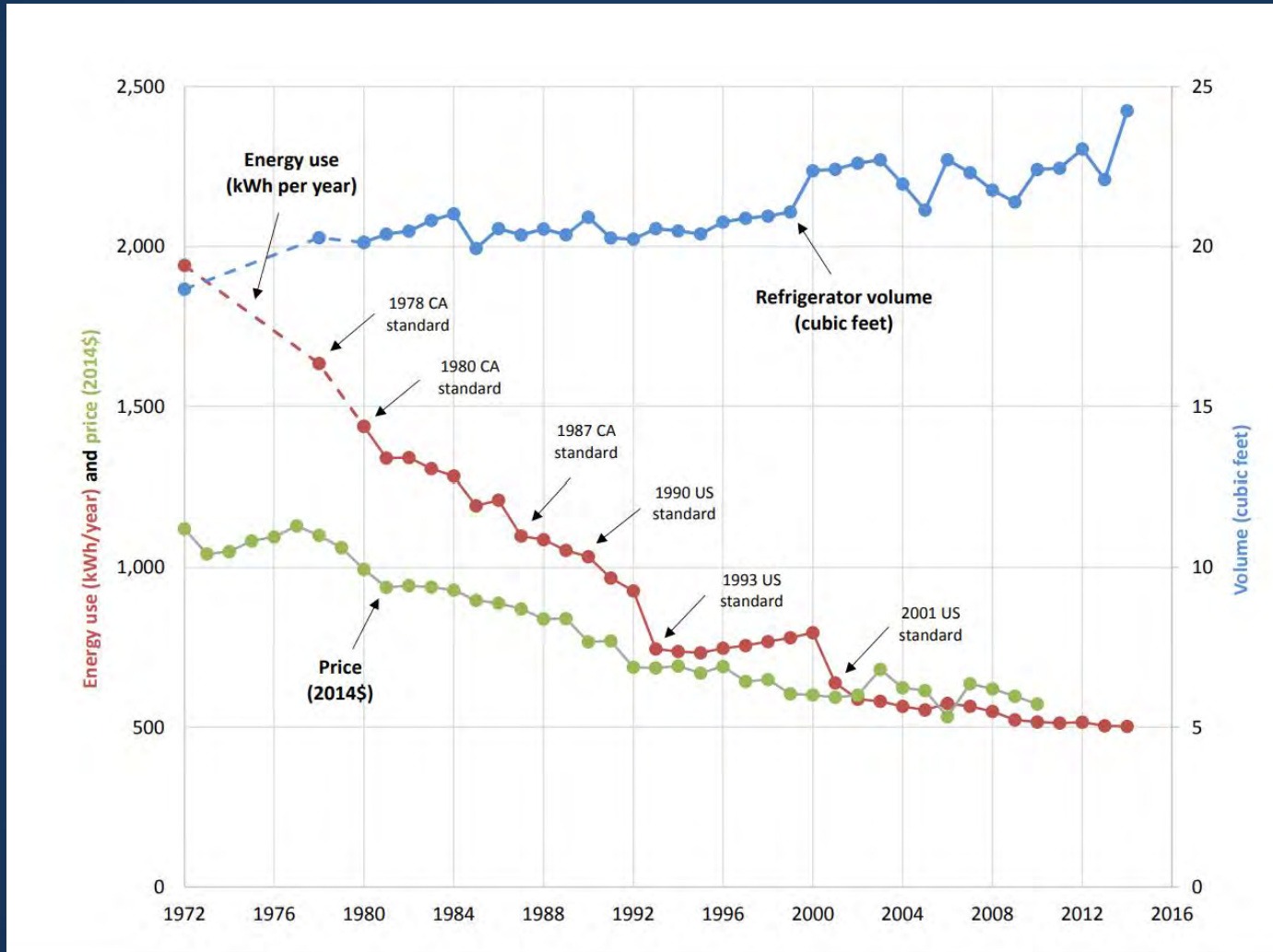


Source: *The Furnace in the Basement, Part I: The Early Days of the Hot Dry Rock Geothermal Energy Program, 1970-1973* (Los Alamos National Laboratory, 1995), p. 3.3

1970s energy crisis

- 1973-74 Arab oil embargo and 1979 Iranian Revolution
- Large increases in oil prices
- Other disruptions to energy supplies – gas, coal, electricity
- Increased focus on conservation and research into new energy sources

U.S. household refrigerator energy use 1972-2014



NASA / ERDA wind turbine Sandusky, Ohio – October 1975



NASA

Solar photovoltaic power



National Renewable Energy Laboratory (NREL)

Future legacies of the 1970s R&D push?

- Enhanced geothermal
- Iron-air batteries
- The hydrogen economy
- And more?