Getting Beyond the Hype:
A Critical Review of the Economic Impacts of the Proposed Roca Honda Uranium Mine

Executive Summary

A report prepared for the

Multicultural Alliance for a Safe Environment (MASE)

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Roca Honda Resources LLC has proposed a uranium development project that would involve a mine in the vicinity of the city of Grants, New Mexico. The uranium mine would make use of Cibola National Forest land and Roca Honda Resources has submitted a mining proposal to the U.S. Forest Service for approval.

Power Consulting, Inc. was asked by the Multicultural Alliance for a Safe Environment (MASE) to review the economic impacts that the proponents of the proposed Roca Honda Mine have claimed will result if that mine is built and operated. Those claimed impacts, as described by the mine's proponents, are exclusively positive, including new employment, wages and salaries, and revenues to state and local governments that would be directly and indirectly associated with the proposed Roca Honda Mine.

We emphasize that we will be focused on analyzing the reality of those claimed positive economic impacts. Economics, as a social science, typically emphasizes both benefits *and costs*. In that context, "economic impacts" would refer to both positive *and negative* impacts. However, "economic impact analysis" typically does *not* follow standard economic practice. Instead it provides a proponent's one-sided view emphasizing only benefits and ignoring any costs. In that sense "economic impact analysis" has come to refer to a type of public relations effort designed to help the proponent of a particular project that has public impacts or costs to emphasize the positive aspects of a project in order to garner public support for their project. This is understandable and useful to the companies seeking to increase the likelihood that their proposed project will be approved. It has the drawback, however, of ignoring the public costs that are almost always associated with large industrial projects. That focus on positive impacts (benefits) while ignoring any negative impacts (costs) assures a relatively one-sided presentation that really cannot be accurately labeled an *economic* impact analysis since only part of the economic impacts, the positive ones, are included in the analysis.

This report stays within the context of that narrower and always positive economic impact analysis that is produced primarily to promote the mine. We focus on whether the claimed positive economic impacts associated with the proposed mine are accurately stated. In addition it is important for those claimed positive impacts to be placed within the context of a relatively volatile uranium market and how the local

economy will experience those impacts. It is only in those contexts that the relative importance of the claimed positive impacts can be evaluated.

The analysis in the main body of this report supports that following conclusions:

1. **The positive economic impacts directly associated with the proposed Roca Honda Mine will be quite modest.**

The direct employment associated with the operation of the proposed mine will be between 220 and 253 jobs depending on which Roca Honda Resource projection is used. The total number of jobs in McKinley and Cibola Counties in 2012 was about 41,000. The direct mine employment would add less than one percent to those existing jobs. The pay associated with these mining jobs, however, would be well above average, as high as $75,000 per year.

2. **Because the region around the proposed mine is largely rural, the *ripple* or *multiplier* impacts associated with proposed mine will be relatively small.**

The “ripple” effects associated with the purchases made by the mining company to operate the proposed mine as well as the ripple effects associated with new workers associated with the operation of the mine spending their paychecks will tend to flow rather quickly out of the two-county study area to larger trade centers in New Mexico and the nation.

As a result, for every 10 direct mining jobs or direct mining payroll dollars, only about three additional jobs or dollars of labor income will result due to ripple or multiplier impacts. This puts the total additional jobs associated with the proposed mine in the 340 to 375 job range. The total increase in labor income would be in the $17 to $22 million per year range.

If we look at regional jobs and income creation between the uranium bust in 1983 and the onset of the Great Recession in 2008, McKinley and Cibola Counties were able to add, on average, 790 more jobs each year, 19,000 jobs in total over that 25-year period. The total jobs and payroll associated with the Roca Honda Mine including the ripple effects represent about 6 months of normal job and real income growth during that period.

3. The positive economic impacts estimated based Roca Honda Resources' information, however, were much higher than these estimated economic impacts, as much as <u>eleven</u> times higher.

The Cibola National Forest's Draft Environmental Impact Statement estimated that the total employment impact of the operation of the proposed mine would be 1,184 jobs and the total payroll would be $190 million. Roca Honda Resources presented even larger positive total economic impacts associated with the operation of the proposed mine: 4,123 jobs and $241 million in labor income.

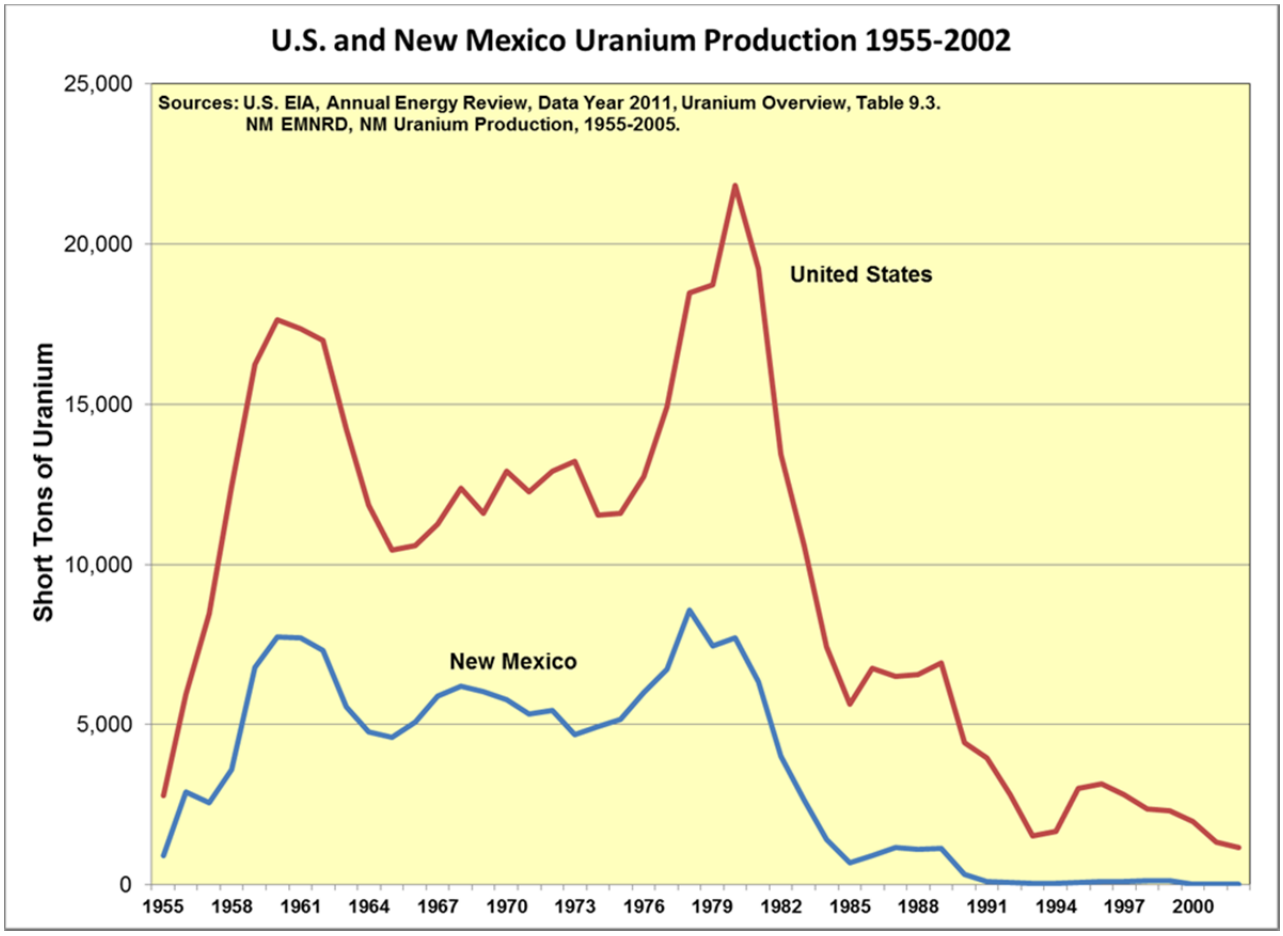
4. These projected very large positive economic impacts associated with the proposed Roca Honda Mine are the result of those impacts being stated as the average number of jobs or the average annual pay of those additional workers <u>multiplied by the life of the mine</u>. That is *not* how employment or payroll is measured.

Employment is measured on an annual basis as are payroll and income. When new jobs are created, they are not reported as the number of jobs multiplied by how long the jobs are expected to last. If they were, the jobs associated with ongoing businesses, schools, and government agencies would be multiplied by 30, 50, 100 or more years. Each working person would be multiplied by his or her expected working life. Individuals' incomes would be reported as all of the income they were expected to receive over their entire lives. Adopting such an approach to measuring jobs and income would generate very big numbers that tell us nothing useful. Given that the purpose of economic impact analysis *is* to generate very large positive numbers in support of any and all proposed projects, it is not surprising that most economic impact analyses do exactly that.

5. The uranium market is rarely stable. Uranium prices fluctuate widely and when they do uranium production also fluctuates. This triggers wide swings in uranium employment, payroll, and payments to governments since all of these positive impacts are associated with the level of uranium production.

New Mexico has had a long history with this instability in uranium mining and milling as well as similar instability in copper mining and smelting. Figure ES-1 shows the fluctuation in uranium production in New Mexico and the United States.

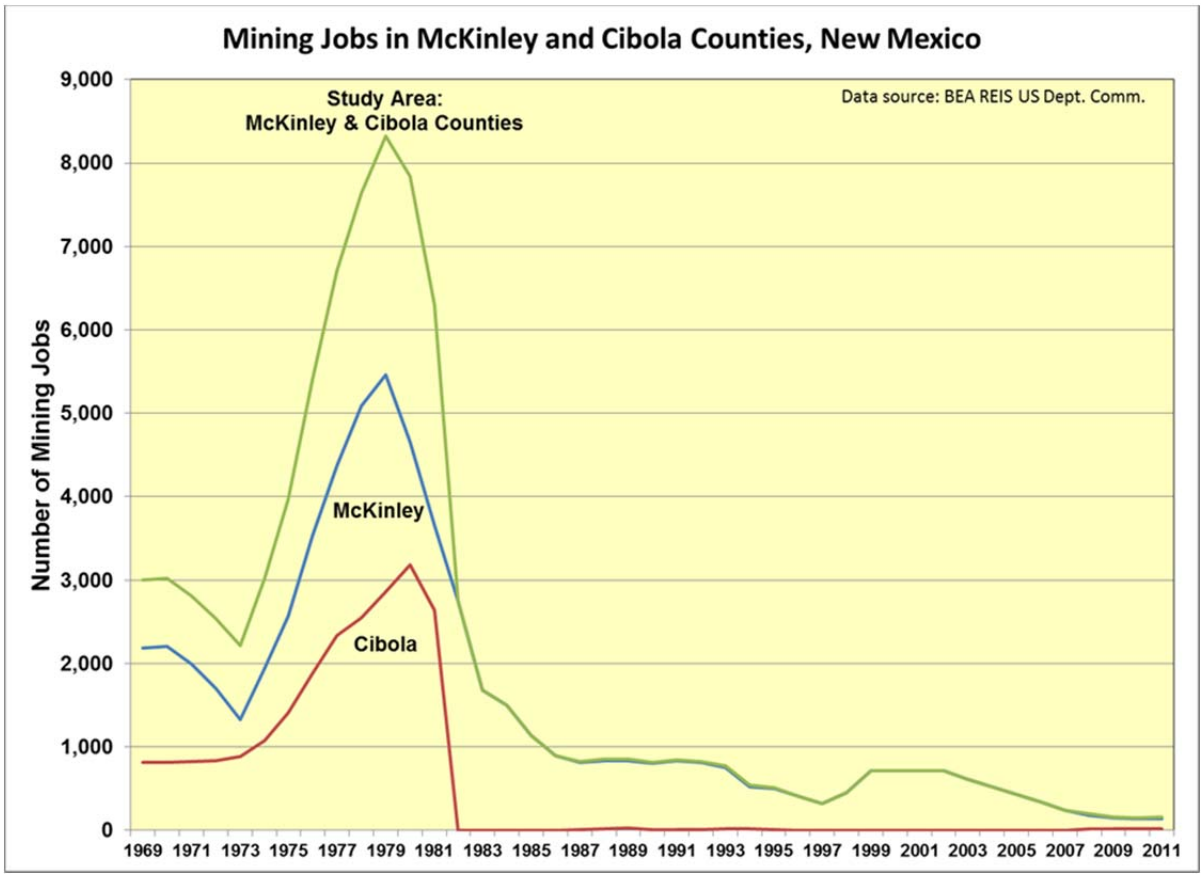
Figure ES-1.



The impact of these fluctuations on uranium production in McKinley and Cibola Counties was also dramatic. Figure ES-2 shows the fluctuation in mining employment in those two counties between 1969 and 2011.[1] Uranium payroll and payments to governments fluctuated in a similar fashion.

[1] Employment data by industry is not readily available at the county level before 1969.

Figure ES-2.



6. Uranium prices have continued to fluctuate widely over the 2004-2013 decade. Each time uranium prices rose, uranium industry analysts have jumped to the conclusion that those high prices were "here to stay" and that a New Mexico uranium renaissance was at hand. Those expectations of high and stable uranium prices have not been realized.

Figure ES-3 shows the recent fluctuations in uranium prices. There were price spikes in 2007-2008 as well as 2011. Those price increases were short-lived. But, at the time, uranium industry analysts projected that uranium prices would stay at $90 or $75 per pound indefinitely into the future. Instead, uranium prices have trended downward. As a result the majority stockholder in the proposed Roca Honda Mine, Energy Fuels, has shut down or plans to shut down all of its existing uranium mines and the uranium mill it owns. This provides a reminder of the inherent instability in uranium mining and processing.

Figure ES-3.

Market Price of Uranium: Spot and Long-Term Contract

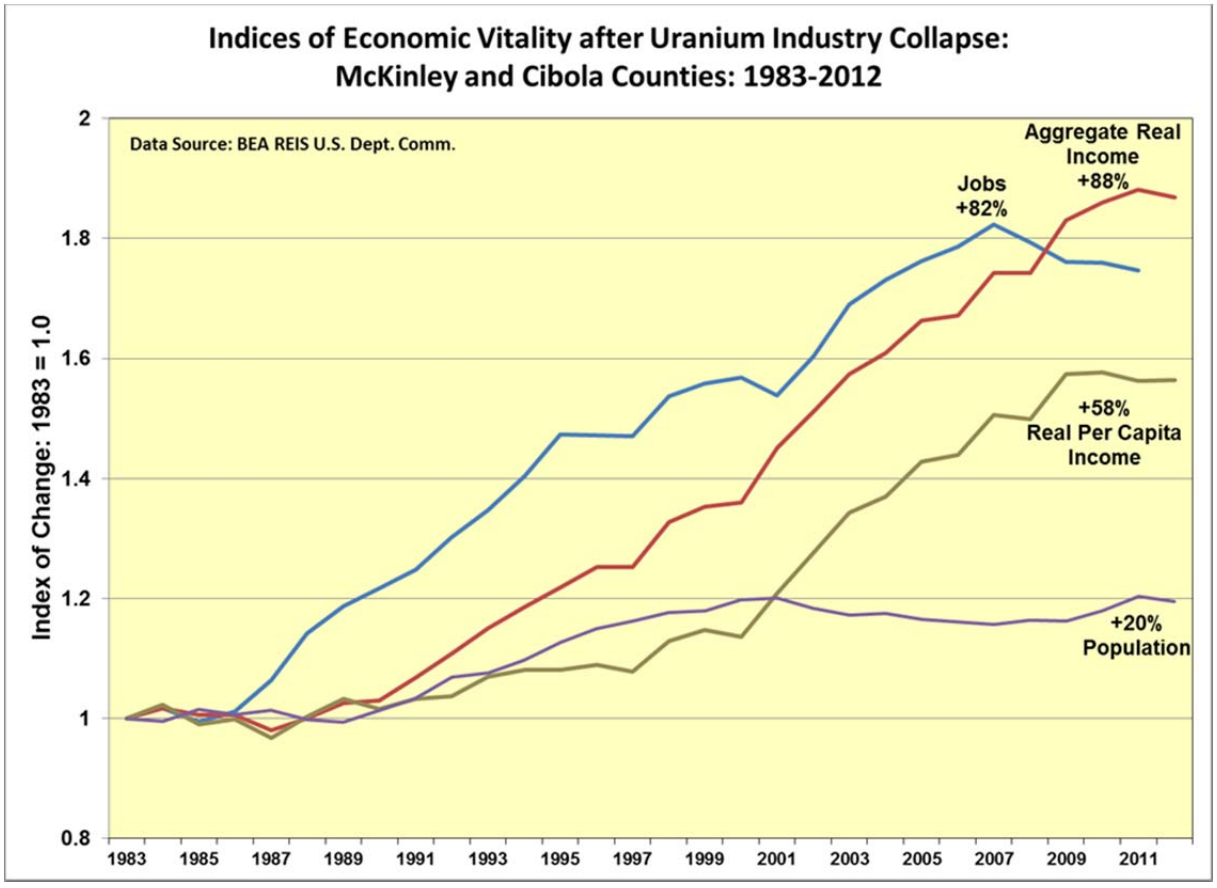
7. Economic impact analysis, such as that carried out for the proposed Roca Honda Mine, assumes stable uranium prices and stable employment, payroll, and payments to state and local governments. This is unrealistic and misleading. It tends to exaggerate the claimed positive economic impacts associated with uranium mining.

An employment opportunity that can reasonably be expected to last for a decade or several decades is a more beneficial addition to a local economy than jobs that can be expected to come and go as a result of continuing commodity cycles on international markets. The former helps stabilize a community. The latter tends to disrupt communities. That is why it is important in economic impact analysis of proposed mining operations to take a realistic view of the fluctuations that can be expected in the claimed positive impacts: jobs, payroll, and government revenues.

8. McKinley and Cibola Counties have shown impressive local economic vitality and improvements in local economic well-being since the collapse of the uranium industry in the early 1980s.

Between 1983 and the onset of the Great Recession in the years following 2007, total real income received by residents increased 88 percent, jobs increased 82 percent, real per capita income rose 58 percent, and population rose 20 percent. See Figure ES-4 below. In addition, the unemployment rate in McKinley and Cibola Counties declined from 10 and 14 percent, respectively, in 1996, a decade before the onset of the Great Recession, to about 4 percent in both counties and the state of New Mexico in 2007, just as the Great Recession began driving unemployment rates up across New Mexico and the rest of the nation.

Figure ES-4.



These positive statements about the performance of the McKinley and Cibola County economies since the uranium bust are not meant to suggest that economic conditions in McKinley and Cibola Counties are what residents wish they were. Average incomes remain below those of New Mexico as a whole and even farther below average relative to the nation as a whole. In 2012 the unemployment rate in McKinley County was 8.7 percent while that for New Mexico was almost two percentage points lower, 6.9 percent.

The unemployment rate in Cibola County was 6.2 percent in 2012, below that of the state of New Mexico as a whole. It should be kept in mind, however, that the official unemployment rate typically significantly underestimates the actual level of unemployment and under-employment.

The two counties that make up the study area for the Roca Honda Mine have among the highest percentages of Native Americans as any counties in the nation: about 75 percent in McKinley and 41 percent in Cibola. There are fewer than 10 of America's 3,100 counties where Native Americans make up a larger percentage of the population than in McKinley County and less than 20 counties with Native American populations that have a larger percentage of total population than in Cibola County.[2] Reservation counties have tended to be plagued by high unemployment and poverty rates that depress average income levels.

Both counties are also rural counties which typically have lower per capita incomes than metropolitan counties.[3] The per capita income in New Mexico as a whole is dominated by its four metropolitan areas where about two-thirds of the New Mexico population resides. So it is not surprising that non-metropolitan counties in New Mexico have lower per capita incomes than New Mexico as a whole. Similarly, the per capital income of the United States is dominated by the 85 percent of the population that lives in metropolitan areas.[4] So when we compare McKinley and Cibola Counties with the United States as a whole, we are effectively comparing rural counties with the nation's largest urbanized counties.

[2] http://www.indexmundi.com/facts/united-states/quick-facts/all-counties/american-indian-and-alaskan-native-population-percentage .
[3] ***Post-Cowboy Economics: Pay and Prosperity in the New American West***, T.M. Power and R.N. Barrett, Island Press: Washington D.C., 2001, Chapter 5.
[4] U.S. Department of Agriculture, Economic Research Service, http://www.ers.usda.gov/topics/rural-economy-population/population-migration.aspx .