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## **HOUSE SUBCOMMITTEE ON ENERGY & MINERAL RESOURCES**

**September 23, 2010 Hearing: "To amend the Surface Mining Control and Reclamation Act of 1977 to clarify that uncertified States and Indian tribes have the authority to use certain payments for certain non-coal reclamation projects."**

### **STATEMENT OF JOHN E. ANTONIO SR. GOVERNOR OF THE PUEBLO OF LAGUNA**

#### **I. INTRODUCTION**

This statement is submitted by the Pueblo of Laguna ("Pueblo" or "Laguna") to apprise the Committee of the Pueblo's efforts to reclaim lands once used for the extraction of uranium ore and to assist the Committee in assessing the Pueblo's need for funds to use for certain non-coal reclamation projects.

The Pueblo of Laguna is a federally recognized Indian tribe located 45 miles west of Albuquerque, New Mexico, and has approximately 8,200 members who are affiliated with six (6) different villages. The Pueblo's lands consist of approximately 590,000 acres in Cibola, Sandoval, and Bernalillo counties, and contain the site of what was once the world's largest open pit uranium mine; the Jackpile-Paguate Mine. The Jackpile-Paguate Mine, which began operating in 1953, was finally shut down in 1982 but then laid dormant for 7 years before reclamation activities began. During that time, stockpiled waste was blown into surrounding areas, including the Paguate Village, located just 30 yards from the mine. In addition, rain caused waste from the mine to flow into surface water tributaries. After years of negotiating with the company who conducted the mining, minimal reclamation efforts began in 1989 and were completed in 1995. However, there still remain piles of high grade ore on the surface and within some of the exposed open pits.

Despite efforts to reclaim the mine after it closed, the mine continues to have a tremendous impact on the long-term health and environmental landscape at the Pueblo. Many Pueblo members who worked in the mine or lived near the mine suffer from cancer-related illnesses and other health conditions. Two surface water tributaries near the mine, the Rio Moquino, and the Rio San Jose have since tested positive for radiation contamination. Groundwater is also at risk for radiation contamination. Because water is scarce in our arid part of New Mexico, the contamination of our water resources is devastating to our people and the entire region. Although no official studies have been conducted to establish a direct correlation between the mining activities and the increase in cancer among individuals who live near or worked in the mine, significant statistical information is being compiled on former mine workers applying for benefits under the Radiation Exposure Compensation Act ("RECA"). Many of these applicants have been diagnosed with cancer-related illnesses.

In addition, other studies that are now being conducted may show a direct correlation between uranium mining activities and various respiratory and kidney problems, and may even extend to problems related to diabetes. Testimony on these and related issues was presented to a State Legislative Interim Subcommittee in Grants, New Mexico in 2009, on the impacts of uranium mining.

As a result of our experiences with mining, the Pueblo is opposed to any new mining on or near Pueblo lands. In 2007, our Tribal Council passed a resolution to establish a moratorium on any uranium mining and development. However, in the event that mining is permitted near our lands, the Pueblo seeks to be included in the process by having a voice to express our concerns about having adequate protections in place.

## **II. MINING AT LAGUNA**

### **A. Uranium Mining, Generally**

Uranium, a silvery-white, radioactive metal similar in appearance to a piece of silver or steel, is never found in its pure form in nature. It is always found combined with other elements into different chemical compounds, which are highly poisonous. Uranium has been used to make material for nuclear weapons and to make fuel for nuclear power plants. Deposits of minerals that include large amounts of uranium, large enough to make mining worthwhile are rare. However, the “Four Corners” area of Arizona, Colorado, New Mexico and Utah contains some of the richest deposits of uranium ores in the world.

Open pit mining is used when the ore is close to the surface and involves removing the “overburden,” or top layers of soil and rock that cover the ore. The overburden is hauled off and often stored in huge piles. Underground mining requires drilling, blasting and digging into the earth and the ore is obtained by the use of elevators. Holes are drilled to provide ventilation because the decay of uranium results in a radioactive gas called radon. Radon can build up in underground mines causing serious health problems for miners. In addition, underground water can cause problems.

Once the uranium is obtained, the next process is “milling,” or removing the valuable mineral from the mined ore. The ore is crushed and then mixed with water to form slurry. The slurry is mixed with chemicals to separate out the uranium ore from the rest of the rock, referred to as “leaching.” The liquid containing the uranium ore, or “leachate,” is then filtered from the rest of the slurry and further concentrated by a precipitation process. Water is then removed and the precipitate is dried to produce “yellowcake,” which is then packaged and shipped to an enrichment plant. Material left over from the milling process is referred to as “tailing,” which are still dangerous because of the radioactive elements they contain.

### **B. Uranium Mining at Laguna**

The Grants Mineral Belt, which stretches from east of Gallup, New Mexico to Laguna, New Mexico and includes Laguna Pueblo lands, has especially rich uranium deposits. In May 1952, the Anaconda Mining Company (later Atlantic Richfield or ARCO) entered into a

lease with the Pueblo to mine uranium on 4,988 acres of Laguna land near the Village of Paguete. Additional leases were signed in 1963 and 1976 for 2,560 and 320 more acres, respectively, for a total of 8,000 acres. As a result, Anaconda operated one of the world's largest open pit uranium mines at the Pueblo from 1953 until 1982. Before the first lease was signed with the Pueblo, Anaconda had signed an agreement with the U.S. Atomic Energy Commission ("Commission"), which made Anaconda the sole ore-buying agent for the Commission. In fact, a majority of uranium produced on Indian land between 1950 and 1968 went to the Commission.

Anaconda utilized three (3) open pit mines and 9 underground mines at Laguna to produce 24 million tons of uranium-bearing ore. More than 400 million tons of earth had to be moved to obtain the ore. Mining conducted from the 9 underground mines primarily began in the 1970's. The Jackpile-Paguete Mine, located near the Village of Paguete, was the deepest open pit mine at 625 feet. The mine operated 24 hours a day, 7 days a week, 365 days a year for 30 years and employed as many as 800 tribal members. At its peak, the mine employed the majority of the workforce at Laguna and neighboring communities.

ARCO closed the mine on March 1, 1982, after which it laid dormant for 7 years before any efforts to reclaim the mine began. More than 2,000 acres of land and several pits needed to be reclaimed. One pit measured over 600 feet deep, and a few pits were filled with contaminated water that had seeped up over the years. A draft environmental impact statement found ARCO primarily responsible and recommended reclaiming the mine because the site was a public health and safety hazard, noting that more serious hazards would develop if the site was left un-reclaimed. Reclamation began in 1989 after ARCO and the Pueblo reached an agreement by which the Pueblo would perform the reclamation. However, the \$43 million provided by ARCO was well below the estimated \$400 million required to fully reclaim the mine. The Pueblo tried to reclaim the mine as best as possible, despite the lack of funding and the fact that there were no standards for reclaiming a uranium mine in place at the time.

In reclaiming the mine, the Laguna Construction Company used the overburden to partially backfill some of the pits. It was specially sloped and terraced to keep it in place and prevent wind and rain from washing it away. Next, a layer of rock, or shale, of up to 12 feet thick was put into the pits to keep radiation from coming up into the air. An additional foot and a half of topsoil was placed over the top and seeded with grasses and other native plants. High grade ore piles that were still on the surface were covered with layers of top soil and reseeded with native vegetation. The Pueblo's reclamation process, the first attempt in the world to reclaim an open pit uranium mine, was completed in 1995, but the Pueblo continues to monitor the mine and its ongoing impacts. And, because the \$43 million provided by ARCO only enabled the Pueblo to conduct minimal

reclamation, much work still remains to be done to fully reclaim the mine and reduce the health and environmental impacts.

### **III. MINING IMPACTS ON LAGUNA**

The Village of Paguate, whose village boundaries lie only 30 yards from the edge of the largest open pit in the mining area, was significantly affected by the mining activity. In this village of approximately 1500 residents, blasting caused old stone and mud houses to crack apart, and dust from the mine coated homes, crops, and clothes. Paguate residents on the south and eastern sides of the village, closest to the mine, recall dust that seemed to linger for hours after a blast and cracks on the walls of homes.

Despite the minimal reclamation efforts, former mining employees as well as Pueblo members living in Paguate and downwind continue to report growing numbers of cancer-related illnesses. Contaminated surfaces and groundwater sources still exist. Of the 24 million tons of ore mined from the Jackpile-Paguate Mine, approximately 23.7 million tons were left as waste, which are still dangerous because of radioactive elements they contain. In addition, water that flows through the old mine, including the Rio Moquino and the Rio Paguate, is contaminated from radioactive elements. Many Laguna members have died, and others suffer from high incidences of diabetes, reportedly linked to radiation exposure attributed to uranium mining. In addition, radiation exposure can cause damage that may not show up for 10-40 years.

Currently, little is known about the stability of the radioactive pollutants and additional risks, which may involve migration into local groundwater supplies or into the atmosphere. Meanwhile, the mine continues to have a tremendous impact on the long-term health and environmental landscape at the Pueblo, where many residents and former mine employees continue to experience deleterious health effects. The mine contaminated parts of the reservation with toxic, radioactive materials and miners who worked at the Jackpile Mine were not warned of the exposure to radiation, including radon gas and radioactive dust.

### **IV. CONSULTATION AND COLLABORATION WITH U.S. ENVIRONMENTAL PROTECTION AGENCY FOR POSSIBLE DESIGNATION OF THE JACKPILE-PAGUATE MINE SITE AS A SUPERFUND SITE.**

During the month of August, 2009, the Environmental Protection Agency (EPA) contacted the Pueblo to see if an Aerial Radiological Survey could be conducted of the entire Grants Mineral Belt area, which includes Pueblo lands and the Jackpile mine site. The purpose of the aerial flyover was to: 1) identify any structures with elevated radiological activity and which might have been associated with historic uranium mining activity at Jackpile; 2) data collected from this survey would allow EPA to focus its ground resources on those structures with elevated radiological activity; 3) EPA would

analyze the results of the data to determine if any remediation is needed; 4) the report, along with the analysis would be given to the Pueblo; and 5) the collected data could potentially be used to secure funds to assist with any remediation.

On September 29, 2009, representatives from the EPA Region 6 Office came before the Pueblo Council and gave a presentation that included their request for the aerial radiological survey, and a request to enter into an MOU to formalize a partnership to deal with any air, water, environmental, and cultural resources impacts as a result of any mining activity. On October 13, 2009, Mr. Larry Starfield, Acting Regional Administrator for Region 6 and several of his staff members came before the Pueblo Council to formally consult with the Council on a government-to-government basis for the following purposes: 1) to discuss how further consultation should take place, i.e., informal vs. formal type of discussions on issues/concerns; 2) the effects of uranium mining on the tribe's air, land, water, and cultural resources; and 3) what type of communications can be agreed upon by both parties during further consultation.

EPA also explained that they were developing a five (5) year Comprehensive Plan on how to deal with uranium issues. This Plan could set out a good communication plan between the Pueblo and EPA; set out certain activities that both EPA and the Pueblo can be involved with; and would also provide that there be a working partnership between EPA and the Pueblo to try and resolve any issues/concerns that the Pueblo has. Representatives from the Pueblo reviewed the Comprehensive Plan and made several comments and/or suggestions on edits to the Plan. EPA also wanted to develop a Data Base of information on uranium issues and wants to work with the Pueblo on how this information can be collected, stored and retrieved for use by all parties – tribe, state and federal governments.

In answer to the question of whether the Jackpile mine site might qualify as a superfund site, it was indicated that the environmental conditions have to be evaluated first to see if the site meets a minimum threshold for qualifying as a superfund site. This evaluation would require a Hazard Ranking Score (HRS), which is a ranking score that EPA would use to see where the Jackpile mine ranks as compared to all other sites throughout the country. After the discussion, the Pueblo Council passed Resolution No. 10-10, approving of the submittal of an application for designation of the Jackpile Mine site as a Superfund Site.

EPA also developed a proposed MOU and presented it to Council for its review. After several meetings and long discussions over the contents of the MOU, the Council and representatives from the EPA Region 6 Office entered into a formal MOU on June 22, 2010.

## **V. STUDY BY THE NEW MEXICO DEPARTMENT OF HEALTH'S ENVIRONMENTAL EPIDEMIOLOGY BUREAU ON THE HEALTH IMPACTS OF URANIUM MINING.**

A presentation was made to the Pueblo Council by Dr. Jana Gunnell, on a request to conduct a study on the effects of uranium mining and the study would concentrate on: 1) testing a participant's drinking water source for uranium; 2) testing a participant's urine specimen for uranium; and 3) conducting a survey with each participant.

It was explained that funding in the amount of \$40,000 was allocated during the 2007 regular session of the State legislature under Senate Bill 611 to "develop a testing protocol, develop and establish a health registry, contract with appropriate testing laboratories and coordinate affected parties in regard to a voluntary testing program for military veterans who may have been exposed to depleted uranium or other isotopes in the Persian Gulf war or in the current Iraq or Afghanistan conflict."

Based on the results from 2007-2008, the Environmental Health Epidemiology Bureau (EHEB) was approved to utilize the funds differently from what was stated in the legislation for a variety of reasons. First, there were a fairly small number of veterans who could be recruited and of those, only 31 out of 83 chose to obtain an isotopic analysis (37%). Second, a health registry for veterans already exists. The Veterans Administration (VA) has a Depleted Uranium Follow-Up Program that has been in existence since 1993. Any veteran who believes he or she was exposed to depleted uranium may participate. Finally, the total uranium in urine is the result used to determine the potential for uranium to cause adverse health effects, regardless of whether there is a depleted uranium component.

The Council approved to allow this study to go forward and information was disseminated out to the public that there were approximately 50 slots for community members to participate in the survey. This study has been completed and initial results have indicated that some tribal members have elevated levels of uranium in their urine. As a follow-up to the uranium study, the National Center for Environmental Health, Centers for Disease Control and Prevention (CDC) is conducting its own study, to see if people who live in an area where there are high levels of uranium in the environment have an increased risk for kidney disease.

## **VI. U.S. GEOLOGICAL SURVEY – URANIUM AND DUST RESEARCH PROJECT**

On July 20, 2010, a presentation was made by Dr. Tanya Gallegos, from the U.S. Geological Survey Office out of Denver, Colorado. The purpose of the proposed research project is to understand the dispersion of wastes from the Jackpile-Paguete mine through the air, water and soil. The purpose of the study was to: 1) look at the effects of

the Jackpile mine on the environment; 2) see how the wind and water has moved the uranium from the Jackpile mine site area to other areas of the reservation and how far; 3) has the air, soil and water been contaminated; and 4) provide information needed to ultimately develop methods for remediation and ground water restoration.

Dr. Gallegos explained that much of the work to be performed in this study would occur out in the field, where there would be a collection of water samples, dust samples, mine waste, radiometric survey, collection of surface soils from various areas in and around the mine site, and also have a measurement of the water parameters – how the water from some small streams may have carried contaminants from the mine site downstream. The timeframe for the study was to commence in September, 2010, and the expected duration was to be about one (1) month. It was also explained that there may be a need to revisit some sites at a later time to collect more dust samples. On August 10, 2010, the Pueblo Council approved to allow the USGS Uranium Study to go forward.

## **VII. PUSH FOR RADIATION EXPOSURE COMPENSATION ACT (RECA) AMENDMENTS AND REFORM OF THE MINING LAW OF 1872.**

The Pueblo has been actively involved in working with the New Mexico Congressional delegation to amend the Radiation Exposure Compensation Act to cover former uranium workers beyond the 1972 cutoff period. As was indicated in the first portion of this testimony, the Jackpile-Paguete Mine did not close until 1982, ten years after the cutoff date under RECA. Many of these post '71 mine workers suffer the same health effects as those pre-'71 workers, and should be afforded the same opportunity to receive the benefits that RECA contemplated for affected uranium workers.

## **IX. CONCLUSION**

Based on the Pueblo's experience with the Jackpile Mine, the Pueblo is opposed to any further mining on or near Pueblo lands. The Pueblo fears that the State of New Mexico, the U.S. Department of Agriculture, and the U.S. Forest Service will permit additional uranium exploration and mining because of the current high demand for uranium, fueled by dwindling uranium stockpiles from existing sources and new orders for a large number of nuclear-fueled power plants worldwide. The State of New Mexico is currently looking at re-opening several mining and milling sites to again mine and mill uranium in efforts to create more jobs and boost its economy. Because of these new efforts and the Pueblo's first-hand experience in dealing with both the health and environmental impacts of mining uranium, and the fact that there would be new dangers from mining and milling of uranium to downwind and downstream water users, the Pueblo has taken steps to start developing its own air and quality standards.

Many federal lands adjoin Indian Country and share water resources essential to the health and welfare of tribes. Therefore, the Pueblo believes that it is imperative that any

new legislation include adequate environmental standards to protect the health and welfare of the adjoining tribal communities. In addition, the Pueblo would like to see the establishment of a Hardrock Reclamation account for the clean-up of hardrock mines, and the establishment of a hardrock community impact assistance account fund.

In closing, thank you for allowing the Pueblo to testify before this Committee. The Pueblo has been exploring the various options, alternatives, and opportunities to get funds to deal with the clean-up of the Jackpile-Paguete uranium mine site for years. What has been done with the limited resources that were made available from the settlement with the ARCO company was far less than what is needed to adequately deal with the health and environmental problems that still exist to this day at that site. We respectfully request the Committee's favorable consideration of amending the Surface Mining Control and Reclamation Act of 1977 to clarify that uncertified States and Indian tribes do have the authority to use certain payments for certain non-coal reclamation projects. If you have any questions, please do not hesitate to contact me at (505) 552-6654.