There's Gold in Them Thar Hills (But We Don't Care)

The Crown Jewel, the General Mining Act of 1872, and Evolving Notions of Value in the U.S. West 1848–2001

At the base of Buckhorn Mountain, six miles from the Canadian border and forty-five minutes from the nearest U.S. Post Office in a remote section of north-central Washington known as the Okanogan Highlands, stands a ghostly cluster of buildings that announce themselves as Chesaw in gold letters on a carved wooden sign. The sign, like much of the town, is in disrepair. Chesaw has spent most of the last century slowly dying out, and today the only sure signs of life are the neon beer signs – Budweiser, Bud Light, MGD – that shine in the windows of the Chesaw Tavern and Store. But it was not always this way. The weathered old rodeo arena across the street (still home to the Chesaw Fourth of July Rodeo) and the quaint balloon-frame homes on the banks of Myers Creek (most of them with faded *For Sale By Owner* signs out front) speak to more prosperous times, when Buckhorn Mountain was a thriving center of the short-lived Washington gold rush and Chesaw was a vigorous boomtown.[1]

Rising behind Chesaw, Buckhorn Mountain looks more like a hill. Compared to the jagged peaks of the Cascades, which explode skyward in spectacular upthrusts an hour to the west, it is an unremarkable mound in the middle of rolling alfalfa fields and cow pastures, easing into its 5,602-foot summit with a long running start. From a distance, its trajectory roughly resembles the top third of a giant submerged watermelon laid on its side. Like the town, it gives no hint of the political and legal firestorm that has raged here in recent years.

There's still gold in this here hill. Fifty tons of it that the miners of Chesaw missed a century ago, according to the Battle Mountain Gold Company (based in Houston) and its partner, Crown Resources (of Denver), who staked a joint claim to a sizable chunk of Buckhorn Mountain in 1988.[2] In 1992 they proposed an open-pit operation called the Crown Jewel Mine that would dig a large hole near the summit and extract the gold over the course of eight years. What they got instead was the spotlight in an ongoing national debate about mining and the frontier-era law that governs it, the General Mining Act of 1872. The only gold diggers to work the Crown Jewel did so in the courtroom until the company, bogged down in unforeseen legal battles and facing falling gold prices, pulled out of the Crown Jewel project in the summer of 2001.[*3]

Fifty years ago a gold mine in a remote, economically struggling area would have been a welcome proposal.[4] Today, more than a decade of effort and over $80 million in prospecting,

[*] Battle Mountain Gold was purchased by Denver-based Newmont Mining, the nation's largest gold mining company, in 2000. It was Newmont, a company with the financial means to hold the property and wait for a more opportune moment, that made the decision to shut down the Crown Jewel project. During the spring of 2001, as the end grew nearer for the Crown Jewel, I interviewed some of the key figures involved in the controversy, notably the mine manager, Dan Robertson, and the area mining geologist for the Okanogan National Forest, Rodney Lentz. With a great deal of additional research, those interviews have been reshaped into the paper before you.

permitting, and legal fees is no guarantee of getting a shovel into the ground.[5] At its source, the controversy over the Crown Jewel is a question of value, a debate over the role of the legal code in both reflecting and shaping society's notions of environmental value. This is the historical crossfire that the Crown Jewel project – and the mining industry as a whole – found itself caught in on Buckhorn Mountain. On one side, industry and its supporters argued that society needs and values the bounties of the Earth, including minerals that must be mined from it. They held that the 1872 Mining Law guarantees them opportunity to make a fortune from the land. On the other side were those who believed nature cannot be quantified by market-based valuation. To them, the use of land for private gain is a privilege rather than a right, and the cost often outweighs the gain in ways that the Mining Law does not account for. The story of the Crown Jewel is the story of the clash between these two perspectives, a study of how the history of Western mining law collided with evolving notions of environmental value on a remote mountaintop in the Pacific Northwest, and how the law came up short.

A Brief History of the Mining Law

The era of the mining frontier in U.S. history, when prospectors played a central role in expanding and solidifying a national presence across the Great West, was a turbulent one. Western mining did not begin with the California Gold Rush of 1849, but the discovery at Sutter's Mill (actually made in January 1848) touched off a frenzied pattern of rushes that shaped and continues to shape the region.[6] At mineral strikes all over the West, support industries – merchants, teamsters, surveyors, assayers, promoters, outlaws, and others – rushed in on the

heels of miners, and towns sprang up full of entrepreneurs hoping to carve their fortunes out of the Earth. The local customs and laws that these communities fashioned in the second half of the nineteenth century are still the core of the mining industry and, consequently, the source of the challenges it now faces.

Only two years before Sutter's discovery, Congress passed the first laws authorizing the sale of publicly held mineral lands to prospectors. In a series of four laws passed between July 1846 and September 1850, much of the previous leasing system that had governed mineral lands was abandoned. However, before the particularities of a fee simple title system* could be fully ironed out, rising tensions between the Northeast and Southeast diverted legislators' attention. It would be years before they returned to the question of Western mining, leaving the miners to devise their own regulatory systems.[7]

Left largely to their own devices, the California '49ers and their subsequent counterparts throughout the West quickly organized into mining districts and formulated regulatory systems that would impose some order on the chaos of the booms. Although tailored to accommodate the unique situations of different mining districts, the local mining codes generally followed two guidelines: they established orderly systems for determining priority to claims and encouraged rapid mineral development as the foremost use of the land.[8] The language of these local codes reflected the prevailing national attitude toward the environment, emphasizing property values and enterprise in the service of resource extraction that would propel and sustain the American

* A fee simple title system involves claiming land and developing it as a precondition to purchasing the title to it. Also sometimes referred to as a claim-patent system.

drive across the continent. In the eyes of the nation, the numerous miners streaming west in search of riches were agents of Manifest Destiny.

A few people did raise environmental concerns – legal ledgers dating back to the first years of the California Gold Rush record complaints that existing water rights were being impinged by the diversion of ditches for and the resultant pollution from mining operations, especially hydraulic mines – but their challenges were consistently defeated in deference to this higher priority.[9] With little in the way of precedence or federal statute to look to, a California Supreme Court judge found in 1857 that, as near as he could tell, the national policy was "to distribute the bounty of the government among the greatest number of persons, so as most rapidly to develop the hidden resources of this region." With that in mind, he concluded that "it may be very safely assumed, that as much good, if not more, is accomplished by the diversion [of water for mining purposes], as could have been attained, had such diversion never occurred… the diversion of the stream promotes this leading interest of the State."[10]

When territorial legislatures were formed, lawmakers often acquiesced to the existing local mining customs that had helped settle their region. And when Congress finally got back to the issue of Western mining during Reconstruction, it looked to such "democratically" derived territorial legislation as a guide. Thus, federal law codified local custom. The market-driven language that prioritized mineral resources and their rapid exploitation above other uses of the land – the common threads woven through the laws of most Western mining districts – became federal statute. Mineral development was officially the foremost use for land.[11]

The first attempt at a national law to govern post–Gold Rush Western mining was the Mining Law of 1866 (14 Stat. 251). It declared all mineral lands of the public domain officially open to exploration and solidified the fee simple title system as the law of the West. Miners could locate lode claims* up to two hundred feet in length and, upon the expenditure of $1000 in improvements, purchase the patent (title) to the land for $5 an acre, twice the price charged to homesteaders.[12] The law was an adaptation of certain controversial customs from the Comstock Lode region of Nevada, bullied through a Congress that knew very little about mining by a miner-turned-lawyer-turned-senator from the region named William M. Stewart (who had also served briefly as the fifth attorney general of California in 1854). Narrow in its scope, the law made no provisions for anything but lode claims, the type being worked in the Comstock bonanza. One California senator, whose constituents included many placer miners, described it as "a bill to promote litigation, create controversy, and occasion difficulties."[13] In 1870 the Act was amended to include the location and patenting of placer claims* up to 160 acres for $2.50 an acre, but the contentious nature of the original could not be overcome by amendments.[14] An overhaul was needed.

The General Mining Act of May 10, 1872 (16 Stat. 217), signed by Ulysses S. Grant, superseded the earlier laws and attempted to close their litigious loopholes by endowing the system with a more palatable uniformity. Designed to refine rather than reinvent the wheel, its intentions were similar to those of its predecessor: promote organized mineral exploration and exploitation on federal lands in the West, offer the opportunity to obtain a clear title to mines

* A lode deposit is one or several veins of ore running near the Earth's surface.
* A placer deposit is an alluvial deposit usually found in sand or gravel, such as in a riverbed.

already being worked, and, in a greater sense, help settle the West.[15] The 1872 law retained the fee simple title structure and reaffirmed the principle of free access for individuals and corporations to prospect for minerals on open public domain lands.[16] Lode claims were extended to fifteen hundred feet along the length of the vein and three hundred feet on either side, while placer claims were reduced to a maximum of twenty acres, making the two similar in size.[17] The amount of improvement needed to patent was halved to $500.[18] In order to keep a claim viable, claimants had to perform $100 worth of labor or make a similar amount of improvements each year until a patent was obtained.[19] The patent price for lode claims remained $5 an acre, placer claims stayed at $2.50, and up to five acres of non-mineral land not adjacent to the claim was made available to be patented for milling operations at the same per-acre price.[20]

Today this frontier-era law still regulates much of the mineral development in the West, although its benefits have shifted dramatically as mining practices have deemphasized the individual prospector in favor of large-scale corporate operations. The regulations control the location and mining of valuable mineral claims, and from Washington to Arizona and everywhere in between, gold, silver, copper, lead, molybdenum, asbestos, mica, tungsten, uranium, and much more have been profitably mined on public lands under the auspices of the General Mining Act of 1872.[21] However, the law does not specify exactly what constitutes a valuable mineral deposit. This decision was left to the Department of the Interior, which in 1873 adopted an economic definition in line with the environmental ethos of the day – the value of the land was determined by the resources that could be profitably extracted from it. The following year the department elaborated on the economic character of the law by adopting the "prudent

man rule" as a test for determining the validity of claims. The rule stipulates that a valuable mineral deposit has been located and may be patented when "the evidence is of such a character that a person of ordinary prudence would be justified in the further expenditure of labor and means, with a reasonable prospect of success in developing a valuable mine."[22] In 1933, responding to increased nonmetallic mineral mining, the Department of the Interior began employing a corollary to the prudent man rule known as the marketability test, which reinforced the economic notion of value in the Mining Law by requiring a claimant to show reasonable likelihood that the mineral deposit in question can be mined, removed, and marketed at a profit.[23]

The Mining Law has been amended on multiple occasions since its passage, most often to exclude specific minerals or areas from patenting, but the gold mining industry has successfully resisted any significant changes.[24] Once a contemporary prospector has conducted exploration work on public domain land, that individual or the company he or she represents may locate a claim to an area believed to contain a valuable mineral.[25] Rodney Lentz, Area Mining Geologist for the Okanogan National Forest, explained the system as it works today: "If the lands are open to mineral entry, any citizen of the U.S. can go out there and look for minerals. If they find minerals they can stake a mining claim. And if they can prove up on that mining claim, if they can show that they have a discovery and they pay the various costs of patenting, they can actually purchase the land" at the per-acre prices set in 1872. Some types of mineral deposits are administered by a federal leasing system (including oil and gas, geothermal resources, and coal), but gold is not one of them. With gold, "it's fee simple title, just like the old homesteads. You get the surface and the mineral estates."[26]

Although not as extensive as it once was, Western mining is still a major economic activity, and a high percentage of modern hardrock mining is on public lands.[27] As it was in 1872, once a claimed mineral deposit is determined to be economically recoverable and at least $500 of development work has been performed, the modern claim holder may file a patent application to obtain the title to surface and mineral rights. Since 1989, a fee of $250 per application plus $50 per claim within each application has also been required. If the application is approved, the claimant may purchase surface and mineral rights at the rates established in the 1872 law – $5 per acre for lode claims and $2.50 per acre for placer claims.[28] These per-acre patenting fees were substantial when the Mining Law was enacted, but the value of claimed land and minerals produced now incalculably exceeds these amounts. Additionally, mineral production can take place without a patent or revenue payments to the federal government, there is no limit on the number of claims a person or corporation can locate, and there is no requirement that mineral production ever commence – if left unchallenged, claims can be held indefinitely, with or without mineral production.[29]

Marketing the Dream: The Role of Nostalgia

Critics of the General Mining Act of 1872 contend that the law's nineteenth-century fee scale amounts to a governmental subsidy of the modern mining industry. Bruce Babbitt, Secretary of the Interior under President Clinton, once went so far as to call the General Mining Law "an obscene example of corporate welfare."[30] It has been estimated that since its passage, more than $240 billion (adjusted for inflation) in gold, silver, copper, lead, and zinc has been mined from

public lands. The total amount of patent fees paid for these minerals is unknown, but it is safe to assume that it does not approach $240 billion, and it is certain that the federal government has never received any royalties on the extracted minerals.[31]

The mining industry insists that the fees written into the 1872 Mining Law never reflected the true cost of mining, and that today they don't even reflect a fraction of the actual expenses involved in locating, developing, patenting, and mining a claim. Modern mining is a capital-intensive venture. Battle Mountain Gold and Crown Resources spent more than $80 million on the Crown Jewel between 1988 and 2001 and never even broke ground.[32] According to industry leaders, forcing mining companies to pay fair market price for the land in mineral claims would make the United States even less competitive with foreign markets and force the industry to carry on an even greater portion of its business overseas, beyond the reach of already-costly U.S. regulations.[33] Royalties charged on the minerals extracted could have a similar effect.

Critics counter that a large portion of the profits from U.S. mining is already leaving the country. There is a nationalistic undertone to the subsidy argument – when the Mining Law was written, mining was a patriotic business. The law reflected the prevailing notion of the time, that mineral exploitation benefited the nation by encouraging white Westward expansion and increasing national wealth, which in a capitalist democracy meant increasing individual wealth. A few social and environmental transgressions could easily be overlooked on the path to this better end. But mining in the United States is not, nor has it ever been, the all-American business the industry likes to portray. Non–U.S. citizens – Native Americans, Mexicans, Chileans, French, and Chinese – settled and mined in California before the Gold Rush, but after 1848 they

were often traumatically expelled by Anglo-American miners who believed that the wealth of the land belonged to them by rights.[34] Occasional vigilante violence (incidents given fantastic names like the Chilean War, the Mariposa War, and the "French Revolution") enforced laws passed by many mining districts barring non-U.S. citizens from working claims. Their prejudices were supported by the California State legislature, which passed a law in April 1850 imposing a twenty-dollar licensing tax per month on all "foreigners" at work in the diggings. Strong protests from the targeted miners (and area merchants) won the law's repeal within a year, but not until after the desired effect was accomplished – newspaper reports estimated an exodus of twenty to thirty thousand foreigners from the San Joaquin district alone.[35]

In 1942 the National Resources Planning Board cited sixteen vital minerals, largely imported from overseas, whose supply would be jeopardized in case of war (such as the world war that was being fought at the time) as reason to develop the deposits in the Pacific Northwest more fully.[36] In 1984 Arizona Representative Morris K. Udall (D), chairman of the House Interior Committee, spoke of the hard times then afflicting the mining industry as a national security risk.[37] Yet at the beginning of the twenty-first century, it is Canadians and Europeans who own many of the companies mining the material wealth of the United States. Critics point out that several of the largest gold mines in the nation, including the incredibly rich Goldstrike on the Carlin Trend in Nevada, are owned by the Barrick Gold Corporation (formerly called American Barrick), a Canadian company started in the early 1980s by a Hungarian-born, Swiss-educated Canadian citizen named Peter Monk.[38] So far, however, public outcry against this outflow of national wealth has been relatively silent.[39]

The industry refutes this charge by invoking the Western folklore of the lone prospector and pitching the Mining Law as the very essence of the American Dream. "The mining law fed the dream of what America symbolized," says Mike Miller, president of the Original Sixteen-to-One Mine in the Sierra foothills. "Being able to go out and stake your claim, work hard, and find success. Reform would take away your right, my right, my children's right to go out into the godforsaken, wonderful land, stake your claim, and pursue it."[40]

This sort of nostalgia – the national folklore of the Gold Rush, the lone prospector chasing the American Dream – is invoked liberally, and no prize is more coveted than "the little guy." Patricia Nelson Limerick has argued that modern mining corporations and their political allies work to keep nostalgic social images of the Gold Rush alive because it helps them maintain the 1872 status quo. The industry has successfully used its position in American folklore to resist any efforts to change the law. Limerick quotes now-retired Senator Malcolm Wallop of Wyoming (reforming the law "would really hurt the small prospector, and believe me, there are a lot of them out there") and Alan Simpson, also a retired senator from Wyoming ("This is not about money. We are defending our Western heritage."), as typical examples among the bevy of Western lawmakers who fall back on this nostalgia in their refusal to pursue widespread reform of the 1872 Mining Act.[41] In his 1989 *New Yorker* article about the Carlin Trend in Nevada, the nation's richest gold deposit, John Seabrook invoked a liberal dose of nostalgia as he highlighted his subjects' struggle as "the little guys" trying to make good on their God-given right to pursue their fortunes in the American soil. He quotes one of them, Don Smith, founder and president of Citizens for Mining in Battle Mountain, Nevada, praising the 1872 Mining Act as "the best damn

law ever written" and "the only friend the little guy's got."[42] In the Okanogan National Forest, site of the proposed Crown Jewel, the Forest Service receives half-a-dozen or fewer mineral claims each year, almost all from small prospectors.[43]

Yet few if any small prospectors have the resources necessary to develop and mine a strike like the Crown Jewel, and, nationwide, the vast majority of profitable claims are not operated by the little guy but by corporations. In the Carlin Trend, the little guys John Seabrook meets prospect for claims without any intention of actually developing them – lacking the resources to actually mine the deposits, they dream of selling their finds to corporations like Barrick.[44]

The Rise of Environmentalism: Reassessing Value

In addition to challenging the low prices specified in the General Mining Act of 1872, critics of the law also point to its lack of environmental controls and question whether potential benefits of mining outweigh the historic costs of the industry's notoriously bad environmental track record. The greatest legacy of the hardrock prospector may be the 500,000 abandoned mines that pockmark the Western landscape.[45] Pits, tunnels, and adits* are a history carved into the land, a visible catalog of one segment of the American Dream.

Less visible but equally prominent are the impacts these mines have and continue to have on the environment. Large-scale habitat removal, chemically-intense milling processes, acid mine drainage, poisonous tailings, and water table reductions are all serious environmental

* An adit is a roughly horizontal tunnel from the surface.

threats associated with mining. Today, nearly thirty hardrock mining and mineral processing sites in the West are on the Environmental Protection Agency's (EPA's) Superfund list. One of them, the abandoned Berkeley Pit mine near Butte, Montana, once filled with water so poisonous that waterfowl were killed on contact. And it is estimated that 16,000 more abandoned mine sites not on the EPA's reclamation list pose serious water contamination threats.[46] But in nineteenth century America, such threats to the environment, when they were perceived at all, were usually brushed aside. After all, mining was "a leading interest of the State," and the American environmental ethos of the day was willing to tolerate a few unfortunate side effects, like cloudy drinking water, as a byproduct of the relationship between industry and nature.[47]

In the nineteenth century, the connotations of nature and wilderness that the Western frontier represented to many Americans were dualistic. Traditions inherited from Europe viewed wilderness as romantic and mysterious, something to be valued for its separation from society, its very wildness. But it was also something to be feared and tamed by the brave pioneers of civilization as they marched across the continent.[48] Miners were the celebrated leaders of the march, the very embodiments of the fabled American individualism.

Yet not everybody celebrated their progress. The first lawsuits against mining began in the 1850s, and by the 1870s hydraulic mining outfits regularly found themselves in court. Armed with the "leading interest of the State" precedent laid out by the California Supreme Court in 1857, the mining industry successfully defended itself against these environmental lawsuits for twenty-five years. It was not until 1882, when a farmer named Edward Woodruff from Marysville, California, filed suit against the North Bloomfield Gravel Mining Company, that the

mining industry was forced to acknowledge that its priority, granted by the Mining Law, extended only so far. Backed by the townspeople, Woodruff claimed that both his crops and his property had been damaged by floods that were the result of tailings dumped by North Bloomfield's hydraulic operation into the Yuba River and its tributaries. Citing laws that protected agriculture and property owners, he sought a permanent injunction against further operations. The mining companies countered with the now-familiar refrain that an injunction would open the door to regulation that would cripple the industry, throwing thousands of people out of work and causing irreparable damage to state and national economies. Judge Lorenzo Sawyer, who had himself originally come to California seeking gold, did not buy it – in January 1884 he issued the nation's first environmental injunction, ordering hydraulic mining operations around Marysville to cease the discharge of tailings into the Yuba system.[49]

Underpinning *Woodruff v. North Bloomfield* and other early legal battles over mining was a concern for the environment that understood its value in terms of how the land could be used to the best economic benefit for all. A few people at the time did speak out publicly against mining's negative impact on the environment without claiming personal economic damages – Dame Shirley, Rossiter Raymond, and Dan De Quille were leading voices – but they were the decided minority. "Mining fit into a larger picture, the settlement of land and the development of American industry," notes Duane A. Smith. "Because of its position, the few who spoke against its depredations seemed to be out of step with reality, with progress, with American development – prophets without followers and little honored by their own generation."[50]

As *Woodruff v. North Bloomfield* and other legal challenges across the West were beginning to reassess the priority of economic values ascribed to the environment, a new view was emerging in the East that recognized a less quantifiable value in nature. Henry David Thoreau was its first well-know spokesperson, urging Americans from the shores and pages of *Walden* to embrace nature as an antidote to civilization, rejoicing in extremes by living with a foot in each world.[51] Slowly over the course of the second half of the nineteenth century, as the Industrial Revolution transformed Eastern cities into overcrowded urban centers, America took to the message.[52] For the first time in history, many Americans began to agree that nature and wilderness should somehow be preserved. As a response to this shift in popular understanding of the environment's value, the latter part of the nineteenth century saw the creation of the first national parks and forest preserves.

With Yellowstone National Park (1872) and Adirondack Forest Preserve (1885) in place but the ultimate position of wilderness still in flux, along came John Muir. The self-styled "poetico-tramp-geologist-bot. and orinth-natural, etc! – ! – ! – !" brought nature and wilderness to the forefront of the public eye and kept them there with Thoreau-esque writings about his travels though America's wild lands.[53] His constant promoting turned wilderness into an issue on the national political landscape, and Muir's 1913 showdown with Gifford Pinchot over the proposed dam in the Hetch Hetchy Valley, within the boundaries of Yosemite National Park, marked the environment's initiation into nationwide legislative controversy. Letters from people across the country poured into lawmakers' offices, many of them arguing that "loftier motives"

than saving money for San Francisco ought to be considered when discussing wildernesses such as Hetch Hetchy, because their value was beyond computation in economic terms.[54]

Muir lost the debate and the Hetch Hetchy Valley was dammed, but it is significant that the controversy occurred at all. That such a nationwide outcry was made over a proposal that a half-century before would not have occasioned any thought of protest is an important benchmark of the nation's growing awareness of environmental issues and the growing inherent value ascribed to nature.[55] One can draw a direct line from the Hetch Hetchy conflict to Buckhorn Mountain. In both cases, the issue was one of value – value given to land by human needs and extractive capabilities versus a growing idea of its inherent value.

The next nationally prominent voice of the environmental movement was that of Aldo Leopold. More sophisticated in his thinking than Muir was in his promoting (partly because he found an already-educated audience), he blended logic and science with ethical and aesthetic sensibilities into discussions of what wilderness was and should be.[56] With well-rounded arguments, Leopold contended persuasively á la Thoreau that the welfare of the nation beyond its material needs was wrapped up in wilderness, and its balance with civilization was crucial.[57]

As the American environmental movement has developed, expanded, and popularized Thoreau's original ideas, the latter part of the twentieth century has seen increasing environmental legislation. Nature and wilderness have become highly valued repositories of solitude, calm, spirituality, and vitality for a significant portion of the nation's citizens. The rise of the science of ecology, leading to an ever-increasing understanding of the complexity of ecosystems and the role that humans play in them, has invested wilderness with value as a

custodian of healthy water and air. As these new values have solidified their claim to the land, environmental management has become increasingly complex and political as the government tries to design plans suitable across the spectrum of wilderness experiences, including extractive land-based industry.[58]

Yet today many of those land-based industries are fighting for their lives. Miners join loggers, fishermen, ranchers, and others as they complain that they feel unfairly vilified and victimized by radically-slanted environmental dramas played out in sound bites on the evening news.[59] The mining industry admits that it carries a great deal of environmental baggage, but it claims that it is not the bad guy of the past. Dan Robertson, the former Crown Jewel project manager, thinks that the environmentalists were right about the harmful effects of mining in the 1950s and before. "We'd have been better off just not mining than doing some of the things we did then," he said to me, pointing at an enlarged aerial photograph of his company's namesake at Battle Mountain, Nevada – a huge open pit with a streak of dead, acidic ground where they once let the tailings run down the mountain. But today, thanks to increased public awareness about environmental issues and a profusion of federal laws, from the Clean Water Act to the Endangered Species Act, as well as state legislation, mining operations are forced to be more environmentally responsible than ever. Battle Mountain had plans to create a new environmental department staffed by five people to work solely on the Crown Jewel.

The Defeat of the Crown Jewel

Gold mining has never been a vital industry in Washington, and the Crown Jewel promised to be the biggest gold operation in the state since the mining boom (centered mainly in Idaho but extending into eastern Washington) that helped create the Inland Empire over a century ago.[60] The gold has been there all along, but it could not have been mined by earlier miners because it was neither technologically nor economically feasible. In fact, it was not even visible.

Around thirty-eight million years ago, hot springs laden with microscopic flecks of gold and other metals boiled up through tectonic fractures the Earth's crust and cooled, disseminating throughout the older rock at the surface rather than collecting in veins.[61] In a few places near the surface it pooled, and it was these deposits, exposed roughly twelve thousand years ago by the advance and abrupt retreat of the most recent Ice Age, that prospectors first discovered mineral deposits in the mid-1890s.[62] The land was part of the Colville Indian Reservation, but it wasn't long before the northern half of the reservation was opened to mineral exploration, and almost five hundred gold, silver, and copper claims were located in the area during the ensuing rush. The first mine on Buckhorn Mountain – called Copper Mountain in those days – was the Copper Queen, opened in 1895.[63]

Chesaw, the new boomtown at the base of Buckhorn Mountain, exploded as enough precious metal was scratched from the mountain to feed bigger dreams.[64] Over the next four decades, men tunneled into the mountain with varying degrees of success at mines called Roosevelt, Magnetic, Buckhorn, and Gold Axe.[65] An adit from the Gold Axe came within thirty feet of one of the richest parts of the Crown Jewel. They dug right through the heart of the

deposit. The miners of the Gold Axe probably moved thousands of ounces of gold before giving the adit up as hopeless.[66]

The problem was that they could not *see* the gold. The gold of the Crown Jewel is the microscopic fleck-gold that boiled up to the surface thirty-eight million years ago. It is so small and so thoroughly disseminated in the rock that, except in the few places it pooled, it is invisible to the eye. Yet it is so prevalent that today we are living in the midst of a gold boom bigger than any of the rushes in our national lore. Nature does not create gold quickly, but advancing technology can join forces with a strong market to turn a mass of waste rock into an ore body virtually overnight.[67] Ore is any rock that can be profitably mined; those early miners did not *miss* the Crown Jewel ore body because it was not ore a century ago.

Today, much of the rock in north-central Washington is ore, divided in a patchwork of public and private land. Buckhorn Mountain is on federal land, but just barely, resting on the northern edge of a patch of the Okanogan National Forest.[68] With few exceptions, all national forest land is subject to mineral entry under the 1872 Mining Law, which is why Crown Resources was allowed to explore the area and discover the Crown Jewel ore body in 1988. In 1990 it brought in Battle Mountain Gold as a partner, and the two companies further delineated the deposit. With proven and probable gold reserves of 1.6 million ounces at a grade of .2 and .3 ounces per ton, it is thought to be one of the richest deposits in North America.[69] It is rich because modern technology allows for the profitable extraction of such miniscule amounts of gold from mountains of rock.

In January 1992, Battle Mountain Gold submitted a proposal for the Crown Jewel to the Forest Service (which manages the surface of the land) and the Bureau of Land Management (BLM, which manages below the surface of the land). Over the course of eight years, running night and day, seven days a week, the company planned to dig a pit 116 acres square (the size of 116 football fields) near the summit of Buckhorn Mountain.[70] From this pit they planned to remove 97 million tons of waste rock, to be deposited into two waste rock disposal piles. Three thousand tons of ore-bearing rock per day would have been crushed and processed through the mill. The gold would have been extracted by a cyanide leaching process, which Battle Mountain expected to require 1711 tons of sodium cyanide annually.[71] In this area plagued by an unemployment level that hovers in the 8.5-9 percent range, more than twice the state average, the mine will create 145 high-paying jobs (hardrock mining has recently paid $40,000 to $50,000, double the industrial average wage). It could bring Chesaw back from the dead.[72]

In the end, the Crown Jewel would have produced a gold brick the size of the bed of a pickup truck, worth more than $400 million even at the depressed gold prices of the late 1990s.[73] And after they were done, Battle Mountain Gold promised to reclaim the area, removing all traces of milling facilities, reforesting disturbed land, and turning the pit into a deep, peaceful mountain lake stocked with indigenous species of fish. In artist's renditions, prominently displayed in the lobby of the Battle Mountain office, it looked like paradise.[74]

As soon as the first Plan of Operations was filed, the Forest Service began the scoping process for the Environmental Impact Statement (EIS) and Battle Mountain Gold began applying for the seventy local, state, and federal permits necessary to put in a mine.[75] But as the issue of

Mining Law reform became more contentious politically, Congress enforced a moratorium on the issuance of mining patents beginning in fiscal year 1995 and renewed every year thereafter. However, the Crown Jewel was allowed to proceed under a grandfather clause for proposals that had already reached the first-half benchmark in the permitting process.[76]

Fighting the Crown Jewel every step of the way was the Okanogan Highlands Alliance (OHA), a grassroots coalition of about five hundred members lead by David Kliegman of Tonasket, Washington, a small town on U.S. 97 a little over an hour from Buckhorn Mountain. On a website, at local community events, and from the pulpit of the *Buckhorn Bulletin*, OHA's desktop-published newsletter, Kliegman and friends preached that an unspoiled Buckhorn Mountain is worth more than the gold inside of it.[77]

Aware of the powerful triumvirate of law, industry, and history aligned against them but convinced that the tide was turning, the OHA attacked the notion that the potential value of the Crown Jewel's gold outweighed the value of maintaining the integrity of the ecosystem around it. They questioned Battle Mountain Gold's commitment to promised reclamation efforts, pointing to examples of mining companies going "strategically" bankrupt to avoid cleanup costs that would negate profits, thus leaving U.S. taxpayers to foot the bill.[78] And they argued that no amount of gold in Buckhorn Mountain would cover the costs of a large-scale cyanide spill – local creeks would feed the poisoned water into the Kettle River, which flows north into Canada before reentering the United States to join the Columbia on its journey through the geographic and cultural heart of the Pacific Northwest before emptying into the ocean. When the industry argued that the Crown Jewel had sufficient safeguards against such a catastrophe, the OHA

pointed to two large-scale cyanide spills at Romanian mines similar to the Crown Jewel that had killed five hundred miles of the Danube in 1998.[79] Exploitation of minerals at such potential cost to the environment, they argued, amounts simply to a transfer of costs.

Despite OHA's best efforts, the Forest Service approved Battle Mountain Gold's proposal in the Final Environmental Impact Statement (FEIS) and subsequent Record of Decision (ROD) in January 1997.[80] OHA and a number of other groups appealed the decision, but everything appeared to be on track for the Crown Jewel until November 7, 1997, when Department of the Interior Solicitor John Leshy issued an opinion on Section 15 of the 1872 Mining Law, commonly known as the millsite provision, that turned the dated language of the law back on the mining industry. He found support for a literal interpretation of language specifying that ancillary facilities should not exceed five acres per claim.[81]

Leshy's decision reversed the common practice of both the Forest Service and the Bureau of Land Management of granting mining companies what they needed in the way of millsite properties. At the time of the decision, the *Forest Service Manual* instructed that "The number of millsites that may be legally located is based specifically on the need for mining or milling purposes, irrespective of the types or numbers of mining claims involved."[82] Similarly, the BLM *Handbook for Mineral Examiners* specified that "Any number of millsites may be located but each must be used in connection with the mining or milling operation."[83]

Because the Forest Service had already published its FEIS and signed the ROD, the Crown Jewel, which planned 649 acres of ancillary facilities for 138 acres of mine across fifteen claims, was again exempted by a grandfather clause. If it had been subject to the ruling, the

fifteen mineral claims would have entitled the Crown Jewel to only 75 acres of millsite, effectively making an open-pit mining operation impossible.[84] And then, in February 1999, the Forest Service was ordered to withdraw the FEIS and ROD from the Crown Jewel, thus subjecting it to the millsite restriction. By March, both documents were officially vacated and development could not go forward.

A last minute rider, attached by Washington Senator Slade Gorton to the Kosovo Emergency Relief Bill of 1999, allowed mines with Plans of Operation that had been approved before the Leshy decision to operate according to those plans, and again the Crown Jewel was grandfathered back to work.[85] A week and a half after its passage, the Forest Service reinstated the FEIS and the ROD and the Bureau of Land Management granted its final approval to the Crown Jewel Plan of Operations.[86] Once again all everything looked to be on track.

But Battle Mountain Gold's fortunes were derailed for the last time in January 2000 when the Washington State Pollution Control Hearing Board, a bipartisan three-person panel, overruled the Washington State Department of Ecology and withdrew the Crown Jewel's Section 401 water rights determinations permit.[87] Four permits short of the required seventy, the Crown Jewel Mine sat stalled, its appeals awaiting a day in court, until Newmont Mining purchased Battle Mountain Gold and, faced with the prospect of lengthy court battles and falling gold prices, decided to pull out of the project in the summer of 2001.[*]

[*] Buckhorn Mountain sat undisturbed for over two years, but in September 2003, Crown Resources reapplied to the Washington State Department of Ecology and the U.S. Forest Service for permits that would allow an underground tunnel mining operation on Buckhorn Mountain. In October 2003, Crown Resources partnered with Kinross Gold, which has an existing mill nearby on the Kettle River in Ferry County, Washington. According to a company press release, as of December 2004, they had received some critical patents and were hoping to start constructing the mine in late 2005.

Evolving Notions of Value

The contentious case of the Crown Jewel illustrates a deep division in the modern U.S. West, where extractive land-based industries such as mining, historically the bedrock of the Western economy, are being confronted with evolving notions of how land is valued. For over a century, growing numbers of Americans have been moving away from a strictly economic, market-based understanding of natural resources toward a more holistic and complex reckoning of environmental value. For years the mining industry has managed to stem this rising tide by employing a version of history distorted by nostalgia, romanticizing its position in American folklore to perpetuate a frontier-era law, but the defeat of the Crown Jewel lends support to those who say that the General Mining Act of 1872 has outlived its time.

A half-century earlier, a gold mine in a remote, economically struggling area would have been a welcome proposal. The defeat of the Crown Jewel signifies an increasingly urgent need to reconsider the notions of value written into laws that govern the use of land. Today the debate over how such laws reflect and shape our notions of value is becoming increasingly public, with controversial issues like methane mining in the Powder River Basin of northeast Wyoming and oil drilling in the Arctic National Wildlife Refuge making regular appearances in newspaper headlines. In a land that has been historically shaped and supported by land-based industries, Westerners are beginning to redefine the value of natural resources beyond the context of market economics. If we are to have useful laws guiding the Western landscape toward a sustainable future, this redefinition process must be echoed on the political landscape, and the General Mining Act of 1872 has for too long been the place to begin.

Endnotes

[1] Pauline Battien, *The Goldseekers: A 200 Year History of Mining in Washington, Idaho, Montana, and British Columbia* (Colville, WA: —, 1989), 143.

[2] Battle Mountain Gold Company, *Plan of Operations*, 25 June 2001 (abridged). Available [online]: <http://www.or.blm.gov/Spokane/planningdocs/crown_jewel/crown_jewel_poo.htm> [26 February 2001]. The deposit on Buckhorn Mountain was discovered by Crown Resources exploration geologists in 1988. Exploration by Battle Mountain Gold Company, brought in as a partner by Crown Resources, further delineated the deposit from 1990-1992, and a Plan of Operations proposing the mine was filed in January 1992. At the time they estimated proven and probable gold reserves at 1.6 million ounces.

[3] Robert McClure, "Plans for Crown Jewel Open-pit Mine Dropped," *Seattle Post-Intelligencer*, 25 July 2001.

[4] National Resources Planning Board, *Development of Resources and of Economic Opportunity in the Pacific Northwest* (Washington, D.C.: GPO, 1942): 9-10. In an October 1942 report, the Pacific Northwest Regional Planning Commission noted that "the region's mineral deposits have neither been fully developed not even completely explored" and recommended that more be done in the area of mineral production in the Pacific Northwest. They even predicted the Crown Jewel, writing: "Through research and experimentation, new or improved methods of extracting and processing ores may be evolved that will make it feasible to mine deposits that are now considered too costly to work or of insufficient value to make their exploitation worthwhile."

[5] McClure, "Plans for Crown Jewel Open-pit Mine Dropped."

[6] Henry Bigler, "Henry Bigler's Account of Gold at Sutter's Mill, 1848," in Clyde A. Milner II, *Major Prolems in the History of the American West* (Lexington, MA: D.C. Heath and Company, 1989), 312-3; Patricia Nelson Limerick, *The Legacy of Conquest: The Unbroken Past of the American West* (New York: W.W. Norton & Company, 1987), 100. The discovery was actually made by Sutter's employee, James Marshall, in the American River near Sacramento on January 24, 1848. As for the impact of Marshall's discovery on the history of the West, Professor Limerick puts it like this: "Rather than settling the region, mining rushes picked up the American West and gave it a good shaking – and the vibrations have not stopped yet."

[7] Terry Maley, *Mineral Law*, 6th edition (Boise: Mineral Land Publications, 1996), 1-3.

[8] Gordon Morris Bakken, "American Mining Law and the Environment: The Western Experience," *Western Legal History* 1, no. 2 (1988): 218.

[9] Patricia Nelson Limerick, "The Gold Rush and the Shaping of the American West," *California History* 77, no. 1 (1998): 32; Bakken, "American Mining Law," 213-14.

[10] Bakken, "American Mining Law," 213. The Justice was Peter H. Burnett and the case before him was *The Bear River and Auburn Water and Mining Co. v. The New York Mining Co* (1857).

[11] Bakken, "American Mining Law," 214.

[12] Maley, *Mineral Law*, 4. I draw the comparison with homesteaders from Marc Humphries, "The 1872 Mining Law," Congressional Research Service Report for Congress. 94-540 E, 1 July 1994.

[13] Bakken, "American Mining Law," 221-2.

[14] Maley, *Mineral Law*, 4.

[15] Humphries, "The 1872 Mining Law."

[16] *U.S. Statues at Large* 17 (1873): 90-97, 483. *Mining Law of 1872*, Sec. 1. The 1872 Mining Law originally applied to all minerals except coal.

[17] *Mining Law of 1872*, Sec. 3 and 10.

[18] *Mining Law of 1872*, Sec. 6.

[19] *Mining Law of 1872*, Sec. 5.

[20] *Mining Law of 1872*, Sec. 6, 10, and15. Section 15, which has become the focus of the recent controversy, reads: "That where non-mineral land not contiguous tot he vein or lode is used or occupied by the proprietor of such vein or lode for mining or milling purposes, such non-adjacent surface ground may be embraced and included in an application for a patent for such vein or lode, and the same may be patented therewith, subject to the same preliminary requirements as to survey and notice as are applicable under this act to veins or lodes: *Provided*, That no location hereafter made of such non-adjacent land shall exceed five acres, and payment for the same must be made at the same rate as fixed by this act for the superficies of the lode. The owner of a quartz-mill or reduction-works, not owning a mine in connection therewith, may also receive a patent for his mill-site, as provided in this section."

[21] Humphries, "1872 Mining Law."

[22] U.S. Department of the Interior, "Mining Claims and Sites on Federal Lands." Available online at http://www.blm.gov/nhp/300/wo320/miningcl.html (accessed 20 February 2001). The prudent man rule is based on the Department of the Interior decision in *Castle v. Womble* (19 LD 455). The U.S. Supreme Court endorsed the test and its economic definition of value in 1905 in *Chrisman v. Miller* (197 US 313).

[23] *ibid.* The marketability test is based on the Department of the Interior Solicitor's 1929 opinion in *Layman v. Ellis* (52 LD 714). It was upheld by the U.S. Supreme Court in 1968 in *U.S. v. Coleman* (290 US 602-603).

[24] For a concise chronological summary of changes in mineral law, see the first pages of Terry Maley's *Mineral Law*, 6th edition.

[25] Humphries, "1872 Mining Law." Public domain lands are those retained under federal ownership since their original acquisition by treaty, cession, or purchase as part of the general territory of the United States, including lands that passed out of but reverted back to federal ownership. In the twelve Western States (including Alaska), 53 percent of the land is federal. The Bureau of Land Management has the authority to withdraw or close public lands to mineral entry. According to a survey by the Bureau of Mines conducted in 1991, roughly 64 percent of federal lands are unavailable for mining.

[26] Rodney Lentz, interview by the author (Okanogan, Washington: 28 March 2001). Under legislation enacted in 1992, claimants now have the option of paying an annual maintenance fee of $100 per claim in lieu of the comparable amount of improvement work formerly required. Most recently, the Omnibus Consolidated Appropriations Act for Fiscal Year (FY) 1999 extended the maintenance fee through FY2001 at $100 per claim or site (Humphries, "1872 Mining Law).

[27] Bernard A. Gelb, "Hardrock Mining, the 1872 Law, and the U.S. Economy," Congressional Research Service Report for Congress. 94-540 E, 1 July 1994; and Environmental Protection Agency (EPA) Office of Compliance, "Notebook Project: Profile for the Metal Mining Industry," September 1995: 9. In 1995 there were 212 gold mines operating in the United States, the vast majority in the West. In 1990 the General Accounting Office estimated that 30 percent of Western gold production was from federal lands. A year later, a study done by an Interior Department Task Force pegged it at 43 percent. Because of its high value, about 80 percent of the total worth of hardrock mineral production on federal lands can be attributed to gold.

[28] Humphries, "1872 Mining Law."

[29] *ibid.* The number of mineral claims filed with the Bureau of Land Management rises and falls to reflect changes in the law and market fluctuation. Only a small percentage of claims are ever patented, totaling about 3.5 million acres since 1867 – approximately 1.5 percent of all public lands patented. Most of the current mining activity and mineral claims under the Mining Law are in Nevada, Arizona, California, Montana, and Wyoming. Of a total of 235,948 mining claims as of the end of FY2000, approximately 45% were in Nevada alone and another nearly 35% are in those other four states. Washington State has seen very little mining activity in the twentieth century, and almost no gold mining. According to the Bureau of Land Management (BLM), the number of claims declined from about 1.2 million claims in FY1989 to 294,678 for FY1993, thanks in large part to the institution of a $100 per-claim annual maintenance fee to retain an unpatented claim. The number of claims rebounded to 324,651 in FY1997, reflecting the relative strength of the gold and copper industries. But recently claims have fallen to a low of 235,948 for FY2000, due to slumping gold and copper industries and changes in public land policy that significantly lengthened the time it takes to get permission to mine.

[30] T. H. Watkins, "Hard Rock Legacy," *National Geographic* 197, no. 3 (March 2000): 76-96.

[31] *ibid*.

[32] Dan Steninger, "'Giveaway' That Costs $80M," *E & MJ: Engineering and Mining Journal* 200, no. 7 (July 1999): 32. Dan Robertson, Crown Jewel Project Manager, confirmed this number in an interview on 28 March 2001 at the Battle Mountain Gold Office in Oroville, Washington.

[33] Houston, Patrick, et al., "The Death of Mining," *Business Week*, December 17, 1984: 64+. Additionally, Marc Humphries points out in his "1872 Mining Law" Congressional Research Brief that the very notion of fair market value is problematic. In 1989 the Government Accounting Office calculated that, for twenty patents it studied, the federal government had received less than $4,500 in patent fees for land valued between $13.8 and $47.9 million. However, the BLM criticized the GAO's methods, arguing that data on the sale of comparable tracts of land is too rare to make any firm conclusions about the value of land patented under the 1872 Mining Law.

[34] Susan Lee Johnson, *Roaring Camp: The Social World of the California Gold Rush* (New York: W.W. Norton & Company, 2000): 209-15. Some Chinese had settled in California before the Gold Rush, but the bulk came after 1850. The ethnic discrimination that met them is well documented in numerous histories as well as state and federal statues.

[35] *ibid*.

[36] National Resources Planning Board, *Development of Resources and of Economic Opportunity in the Pacific Northwest*, 10.

[37] Houston, "Death of Mining."

[38] John Seabrook, "Invisible Gold," *The New Yorker*, 24 April 1989, 76, and www.barrick.com.

[39] Limerick, "Gold Rush," 38, and The Environmental Working Group, "Who Owns the West?" (2005), http://www.ewg.org/mining. The Environmental Working Group recently released a report focusing on this aspect of the mining industry as part of a larger look at the percentage of public land in the West claimed by miners and mining companies.

[40] Quoted in Watkins, "Hard Rock Legacy."

[41] Limerick, "Gold Rush," 41.

[42] Seabrook, "Invisible Gold," 54.

[43] Lentz, Interview, 28 March 2001.

[44] Seabrook, "Invisible Gold," 53-55.

[45] Limerick, "Gold Rush," 34.

[46] Watkins, "Hard Rock Legacy."

[47] Bakken, "American Mining Law," 213.

[48] Nash, Roderick Nash, *Wilderness and the American Mind*. 3rd ed. (New Haven: Yale University Press, 1982): 44-66.

[49] Duane A. Smith, *Mining America: The Industry and the Environment, 1800-1980* (Lawrence, Kansas: University of Kansas Press, 1987): 69-72.

[50] Smith, *Mining America*, 23.

[51] Nash, *Wilderness,* 94. Thoreau lived at Walden Pond from July 4, 1845, to September 6, 1847. *Walden* was published in 1854.

[52] Thoreau certainly was the leading voice of America's growing environmental consciousness, but this consciousness grew much too slowly for his book sales of *Walden* to reflect it. In later works he laments his library full of unsold volumes.

[53] Nash, *Wilderness*, 123.

[54] Nash, *Wilderness*, 161-81.

[55] Nash, *Wilderness*, 181.

[56] Nash, *Wilderness*, 182.

[57] Nash, *Wilderness*, 189.

[58] Donald Worster, *Nature's Economy: A History of Ecological Ideas*, Second Edition (New York: Cambridge University Press, 1994). Worster traces the rise of ecology as a science and some of the environmental laws and modern conundrums it has lead to.

[59] Roberston, interview, 28 March 2001.

[60] Marshall T. Huntting, *Gold in Washington*, Washington State Division of Mines and Geology "Bulletin" no. 42, 1955. In 1955, State Geologist Marshall T. Huntting summed up the part gold has played in Washington history: "From the beginning, gold-mining activities were intermittent rather than constant. Periods of activity followed by periods of stagnation." (Quoted in Rodman Wilson Paul, *Mining Frontiers of the West* [San Francisco: Holt, Rinehart, & Winston, 1963].) For a brief but thorough history of how mining fueled the creation of the Inland Empire in Washington, see W. Hudson Kensel, "Inland Empire Mining and the Growth of Spokane, 1883-1905," *Pacific Northwest Quarterly* 60 (April 1969): 84-97. For a more in-depth account, see John Fahey, *The Inland Empire: Unfolding Years, 1879-1929,* (Seattle: University of Washington Press, 1986).

[61] David D. Alt and Donald W. Hyndman, *Roadside Geology of Washington* (Missoula, Montana: Mountain Press Publishing Company, 1984), 14. Fifty million years ago at the end of the Cretaceous Period, about fifteen million years after the extinction of the dinosaurs, Buckhorn Mountain was part of a coastal range. The land that is now Washington State and British Columbia ended just a few miles to the west. A little ways offshore, the Earth's crust plunged into a deep ocean trench, much like the one that sits off of Washington's present coastline. When the North Cascade micro-continent, a free-moving tectonic island, collided with the mainland, the trench was consumed, becoming a long north-south depression between the highlands of the two continental plates – the Okanogan Valley. The fractures in the crust created by this collision gave the gold-laden water its path to the surface. Also see Madeleine Nash, "There's Holes in Them Thar Hills," Time (23 October 1989): 21. Although this article is referring to the Carlin Trend in Nevada, the Crown Jewel is a similar deposit.

[62] Alt, *Roadside Geology*, 87-90. Roughly twelve thousand years ago the most recent Ice Age covered the northern third of Washington with the Cordilleran Ice Sheet. As the glacier advanced and abruptly retreated in torrential meltwater floods, it carved out valleys for streambeds and polished smooth the hills of the Okanogan. Around the same time, a western lobe of the Cordilleran Ice Sheet carved out the Puget Sound.

[63] Battle Mountain Gold Plan of Operations (BMG POO).

[64] Battien, *Goldseekers*, 137, and Gary Fuller Reese, "Tacoma Public Library Northwest Room: Washington Place Names Database." Available online at http://search.tpl.lib.wa.us/wanames/ (accessed 1 April 2001). The town was platted in 1900 and named for John (some sources call him Joe) Chee Saw, a Chinese miner and farmer who sold his produce to the influx of prospectors. Battien claims that Chesaw is the first instance in U.S. history of a town being named for a Chinese immigrant.

[65] Battien, *Goldseekers*, 137-8.

[66] *Final Environmental Impact Statement*, vol. 1, 3-247.

[67] Seabrook, "Invisible Gold," 73.

[68] Buckhorn Mountain is on one of four nonadjacent patches of the Okanogan National Forest that lie on the east side of the Okanogan River. The bulk of the forest lies across the river to the west among the more flamboyant peaks of the Cascades.

[69] BMG POO.

[70] Limerick, "Gold Rush," 36.

[71] BMG POO. The cyanide is delivered as a solid in reinforced 4'x 4'x 4' leakproof flow bins designed to withstand heavy impacts. Each full flow bin weighs two tons (1,700 pounds less than if it were filled with sand), and they arrive in shipments twenty at a time. (Robertson, interview, 28 March 2001)

[72] Gelb, "Economy," and Ross Anderson, "What's worth more: mountain or mother lode?" *Seattle Times*, 18 April 2001.

[73] The Gold Institute, "Historic Gold Prices – 1833 to Present," http://www.goldinstitute.org/markets/1833tab.html (accessed 27 February 2005). The price of gold declined steadily between 1996 and 2001, from an average yearly price of $387.69 to $277.90. The gold price as of April 20, 2001, as I was doing my interviews and research and shortly before the Crown Jewel project was shut down, was $264.40. At this price, the 1.6 million ounces in the Crown Jewel would still be worth $423 million.

[74] Roberston, interview, 28 March 2001. There is a 3-D foam model at the Battle Mountain Gold office in Oroville that shows the area as it looks currently and as it will look during mining and after reclamation.

[75] Rodney Lentz, "Crown Jewel Chronology" (unpublished). The Environmental Impact Statement process evaluated the proposed plan as well as several alternatives for habitat disturbance and destruction, various ore extraction methods, the risk of acid mine drainage, waste disposal methods, effects on surface and ground water, socioeconomic issues, and more.

[76] Humphries, "1872 Mining Law."

[77] Rasmussen, "Golden Victory," 40-5; Okanogan Highlands Alliance, http://www.telever.com/~kliegoha (accessed 7 March 2001; no longer available online); and *Buckhorn Bulletin* 16 (December 1996) – 29 (March 2001) (incomplete).

[78] Bruce W. Finnie and Linda K. Gibson, "Mining companies don't face true risk of environmental harm." *(Tacoma) News Tribune*, January 2001.

[79] "Readers write about environment and other issues" (letters to the editor). *Seattle Times*, 27 February 2000 (three brief letters to the editor).

[80] Lentz, "Crown Jewel Chronology." The scoping process was so extensive that it created enough paperwork and revised Plans of Operation to take up three floor-to-ceiling bookshelves at the Okanogoan National Forest Offices.

[81] John Leshy, "Limitations on Patenting Millsites under the Mining Law of 1872." Available online at www.blm.gov/nhp/Commercial/SolidMineral/3809/finalmillsiteopinion.html (accessed 12 April 2001). Leshy's decision was not a surprise. Ten years earlier he had written a 370-page study of the Mining Law that he called *A Study in Perpetual Motion*. At that time he proposed broad reform of the law that he described as riddled with "hopeless anachronisms," a phrase he echoed in his 1997 opinion on the millsite provision. (John D. Leshy, *The Mining Law: A Study in Perpetual Motion* [Washington, D.C.: Resources for the Future, Inc., 1987], 93.)

[82] USDA Forest Service, *Forest Service Manual 2800 – Minerals and Geology*, 2811.33.

[83] U.S. Department of the Interior Bureau of Land Management, *Handbook for Mineral Examiners*, III-8.

[84] Marc Humphries."The Mining Law Millsite Debate." Congressional Research Service Report for Congress. RL30310, 14 Sept. 1999.

[85] Public Law 106-31, the Emergency Supplemental Appropriation Act.

[86] Lentz, "Crown Jewel Chronology."

[87] *ibid.* In denying the permit, the board cited concerns about potential groundwater pollution and the impact of a plan that required the Crown Jewel to pump water from one side of the mountain to the other. The board said that even though Battle Mountain Gold was required to post a financial bond to ensure perpetual maintenance and pollution prevention, "this approach is tantamount to entering a busy interstate highway on an exit ramp against the traffic. The availability of insurance in that circumstance is no more comforting than the proposed bonding here." (Quoted in McClure, "Plans for Crown Jewel Open-pit Mine Dropped.")