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# Board of Supervisors Memorandum

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February 20, 2007

## Protecting Pima County's Natural Resource Assets and Lands from Mining Activities

### Background

The County has spent a considerable amount of public resources protecting our natural open space reserves from the threat of mining activities and, in particular, the filing of speculative mining claims for mineral exploration on County-owned public lands. Even our Tucson Mountain Park is subject to such threats. In 1981, the Bureau of Land Management (BLM) received a notice for oil and gas exploration within Tucson Mountain Park. The County clearly opposed such exploration, and in a County letter by Gene Laos, then Director of Parks and Recreation, stated "In 1974 the people of this community voted overwhelmingly to outright purchase an additional 2,000 acres for Tucson Mountain Park just so this type of thing would not happen. We have literally spent millions of dollars restoring and revegetating the old mineral scars from the 1920-1950 and we are not about to sit idle and watch this whole sequence of events occur again." Tucson Mountain Park was established in 1929, and the United States Department of the Interior withdrew Tucson Mountain Park from mining and homesteading that same year. In 1959, a portion of the park was reopened to mineral entry by the Department of the Interior. The reopening, and prospect of mining operations in Tucson Mountain Park, caused an immediate explosion of public furor and outcry, which resulted in the withdrawal to mineral entry, and established the Tucson Mountain District of Saguaro National Park.

More recently, the history of our opposition to mining leases on State Trust land within Davidson Canyon has been well documented. Our opposition and concern, however, was unable to convince the State Land Commissioner not to issue an already expired mineral lease on State Trust property in a significantly sensitive and valuable ecosystem, Davidson Canyon (Figure 1). We continue to appeal the State Land Commissioner's decision. We are now also opposing an application for mineral extraction of mineral rights owned by the federal government under State leased property a few hundred yards away from the recently issued mineral lease by the State.

In 2005 we began retaining outside legal counsel with expertise in mineral rights to object to and fight mining claims filed on property acquired by the County for open space at Rancho Seco. In the case of Rancho Seco, it was determined that individuals locating claims on the County's property were more of a nuisance than a real threat due to limited mineral values in the area. Staff continues to have to monitor the situation. Mining activities on federal in-holdings adjacent to our acquired lands at Rancho Seco have caused considerable destruction of the natural landscape and potential environmental contamination (Figure 2). You will remember that during the acquisition hearings for Rancho Seco, individuals conducting mining activities on BLM parcels within Rancho Seco alleged that the property was a toxic waste dump. County testing of lands we acquired resulted in the County fencing off old mine tailings because of contaminants in the soil. We determined that levels of these contaminants were significant enough that public contact with the soil could have resulted in adverse health effects. BLM was notified of the

statements made by these individuals, and the County requested that BLM take appropriate action to ensure that any contamination in this area by these individuals be remediated. These individuals continue to conduct mining activities on federal lands adjacent to County lands.

Over the last year, our objections to the proposed Rosemont Mine in the Santa Rita Mountains within the Coronado National Forest were filed with the United States Forest Service and our Congressional delegation. The proposals for this mine would directly impact the County's preserves along Cienega Creek and Davidson Canyon by damming up Barrel Canyon, thus reducing flows to Davidson Canyon and Cienega Creek (Figures 3-5).

Just last week we were notified of a potential filing of mining claims and mineral exploration by BHP (the mining company responsible for the copper mine in San Manuel, see *Figure 6*, that ceased operations in 1999) on the County-owned Six-Bar Ranch in the San Pedro Valley, along a key tributary to the San Pedro River.

Filing of mining claims, trespass and mineral extraction or the mineral exploration activities associated with mining claims have become a major threat to our preservation of natural resources, a significant potential threat to public health, and a financial drain on taxpayers. A comprehensive approach is necessary to resolve these threats, manage the filing of speculative mining claims, and to mitigate the adverse effects of mineral extraction.

### Legacy of Mining Activities in Pima County

Arizona has a long history associated with mining extraction of our mineral resources. Pima County has been the State's largest producer of copper from time to time. We have a number of other mining activities that have occurred throughout the State in the last 200 years. It is readily apparent that Arizona's rapid population expansion and urban growth, now the fastest growing state in the country, is not compatible with historic or continuing mineral extraction activities.

One of the largest issues associated with past mining activities is the lack of any meaningful reclamation or mitigation of adverse impacts experienced by local communities from these practices. Over 35,000 acres, an area almost twice the size of Tucson Mountain Park, have been or are being used for mineral extraction purposes in Pima County. Much of this land is idle open pits or tailings ponds not now producing any valuable minerals. To my knowledge there are no plans by any inactive or active mine, particularly an open pit copper mine, to attempt to restore the natural landscape through the removal of tailings, depositing the same in the existing open pit, and restoring the general natural landscape. There has been almost no meaningful reclamation of any open pit copper mine, or for that matter, any former large sand and gravel operation in Pima County.

Mining can have a profound effect on aquatic ecosystems. Although the extraction of minerals has a negative impact on the landscape, it is the processing of ore that greatly impacts aquatic resources. Most of the mining in Pima County is performed using open pit mines, which process the ore via a flotation process using water. The rejected materials from this process are then

discarded into tailings ponds where the water evaporates, leaving a large pile of mineralized materials. Possible impacts on aquatic habitats from mining include the reduction of water resources from increased groundwater pumping and the siltation of streams and reduced water quality due to runoff from the tailings piles.

#### Cocio Wash – Avra Valley

The loss of an entire native fish population along Cocio Wash in Avra Valley is a good example of the potentially damaging effects that mining can have on aquatic ecosystems. In 1967, an Arizona Game and Fish Department (AGFD) biologist discovered the federally endangered Gila topminnow in the Cocio Wash, about 1.5 miles downstream of the Silverbell Mine (Figure 7). Several years later, in 1973, Arizona State University biologist W.L. Minckley informed the BLM that the endangered Gila topminnow occurred on a mix of federal and private lands. Minckley also found longfin dace and leopard frogs at the Cocio Wash site. The owner of the mine commissioned Dr. Minckley to study the effects of mine seepage on the downstream riparian community. Dr. Minckley noted that copper and lead were highly concentrated at the site, and that the seepage from the Silverbell Mine tailings may present long-term damage to the animals found at Cocio Wash.

In 1980, the longfin dace and leopard frogs had disappeared from the site, but the Gila topminnow remained. At the same time, green sunfish from a tailings pond at the mine had been washed downstream into Cocio Wash and topminnow numbers seemed low. Subsequent floods washed out the sunfish in 1981, and while the topminnow survived the floods, they could not survive the gray clay and siltation from the mine tailings that were washed into the Cocio Wash pools. BLM biologist Bill Kepner reported, "Our 1982 studies indicate that the Cocio Wash topminnow population is now extinct in that habitat due to recurrent mine spill and inundations by mine tailings." From 1973 to 1982, the site was heavily managed by BLM and AGFD. Despite having been protected by federal law, and having survived for thousands of years as a relic population, the combined management actions were not enough to protect the Cocio Wash drainage from the mine seepage and tailings deluge from the Silverbell Mine.

#### Cienega Creek – Clay Mines

As you know, Pima County has a long-standing interest in acquiring State Trust lands in the area to consolidate the Cienega Creek Natural Preserve, established in 1986 by the Board of Supervisors. Since that time, the County has acquired certain State Trust lands in the vicinity, and more are identified for acquisition via the County's 2004 Bond Program.

The clay-laden runoff from active and abandoned mineral operations on State leased lands nearby pose a continuing threat to the ecological integrity of the Cienega Preserve by damaging native plant cover and soils. Another problem is the threat of non-native species entering the Preserve. This was the subject of a survey of one of the artificial ponds and impoundments created by mining by AGFD in 2002. AGFD found bullfrogs and bluegill sunfish in the claypit pond closest to Cienega Creek. Both of these species are considered highly detrimental to native aquatic species of Arizona.

Cienega Creek has been designated a Unique Waters of the State of Arizona. The Unique Waters designation confers the State's highest level of protection from degradation of water quality. The anti-degradation requirements state that no further surface water quality degradation which would interfere with or become injurious to existing uses is allowable.

The State Land Department has failed to take the measures needed to rectify the discharge of clay to the tributaries of Cienega Creek from the existing operations (Figure 8). Furthermore, State Land Department records indicate the State Land Department required restoration and damage bonds to be posted in the amounts of \$5000 per lease, amounts which are grossly inadequate relative to what was and still is needed to rectify problems at the sites.

Another problematic issue is the traffic created by the mines. In the past, haul trucks from mineral leases have exceeded load limits for County bridge structures. A stop-gap solution was the construction of a dip crossing at Mescal Wash. The dip crossing facilitates resource damage in the Preserve by unauthorized vehicular intrusions, particularly now that the Cienega Valley is being used by immigrant and drug traffic.

### Pima Pineapple Cactus

The Pima pineapple cactus is a federally endangered species found in southern Pima County. Mining has resulted in the loss of hundreds of acres of potential habitat for this species. The various mines near Green Valley cover thousands of acres of formerly potential habitat. When the Mission Mine was expanded in the 1980s, dozens of Pima pineapple cactus were destroyed as mine tailings covered the cactus and the surrounding landscape (Figure 9)<sup>1</sup>. Actions associated with mineral extraction, such as constructing roads, tailings piles, and settling or leaching ponds can also contribute to habitat loss and are expected to continue or increase throughout the range of the cactus.

### Invasive Species

As a result of the changed and disturbed surfaces of a mining operation, many mining sites are colonized by invasive non-native species. Once established on-site, invasive species can spread into the natural surrounding areas. One species of particular concern in Pima County is buffelgrass. Buffelgrass chokes out native plants, and for ten months of the year, provides fuel for devastating fires that can destroy desert vegetation. The desert is not a fire-adapted ecosystem. Originally planted to stabilize slopes, buffelgrass is found on roadsides and on the tailings slopes of many of the Green Valley mines. The first known buffelgrass fire was in 1994, at the Duval Mine (Figure 10)<sup>2</sup>.

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<sup>1</sup> U.S. Fish and Wildlife Service. August 20, 1993. "Endangered and Threatened Wildlife and Plants: Determination of the Endangered Status of the Plant Pima Pineapple Cactus." *Federal Register*. Final Rule. Vol. 58, No. 183. pp 49875

<sup>2</sup> Doster, Stephanie. No date. "Battling Buffelgrass." *Institute for the Study of Earth*. Accessed: <http://www.ispe.arizona.edu/news/articles/buffelgrass.html>

### Water Use

In 2005, water use for metal mining accounted for 10 percent of the total water use in the Tucson Active Management Area (AMA) or enough water to serve about 45,000 households for one year<sup>3</sup>. The agriculture sector used 30 percent, while the municipal sector used 55 percent and other industrial sectors used five percent of the water in the Tucson AMA<sup>4</sup>. A significant portion of the water extracted for metal mining comes from Phelps-Dodge's wells at Canoa Ranch. The groundwater pumping in the area lowers the water table, and affects the long-term viability of the riparian habitat.

Unlike the municipal sector, mines are not required to use or recharge CAP water or reclaimed water in the Tucson AMA to offset their groundwater pumping. State laws do not impose restrictions upon their groundwater use to protect nearby wells from excessive rates of depletion.

### Bankruptcy

Mining is inherently risky, not only due to the nature of the global metals market, but also because contamination risks have been consistently underestimated by the industry. These risks sometimes mean even large mining companies can go bankrupt. In 2005, 106-year old ASARCO filed for bankruptcy, blaming environmental liabilities, including asbestos-related litigation<sup>5</sup>. The move allowed parent company Grupo Mexico to isolate the most profitable parts of the company from about \$1 billion in liabilities, including 19 Superfund sites. The Government Accountability Office said United States Environmental Protection Agency officials expect more such bankruptcies<sup>6</sup>.

ASARCO promised the San Xavier District of the Tohono O'odham Nation that reclamation of the Mission Mine would be done. There is a \$10 million bond for reclamation on the reservation. The San Xavier District has tried to increase the bonds to get adequate financial assurance that reclamation will be done, but they have not succeeded. ASARCO's bankruptcy means that the promises to the tribe are just one liability among many that the bankruptcy courts and banks are negotiating across the country. Filing for protection under bankruptcy could mean that ASARCO will walk away from their obligations to the tribe and others.

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<sup>3</sup> An acre-foot is 325,851 gallons, enough to serve two average households for one year. For 22,400 acre-feet, this is enough water to serve about 45,000 households for one year.

<sup>4</sup> [http://www.azwater.gov/WaterManagement\\_2005/Content/AMAs/TucsonAMA/TAMA\\_documents/2005\\_TAMA\\_Water\\_Use\\_Summary.pdf](http://www.azwater.gov/WaterManagement_2005/Content/AMAs/TucsonAMA/TAMA_documents/2005_TAMA_Water_Use_Summary.pdf)

<sup>5</sup> Stauffer, Thomas, Joseph Barrios and Andrea Kelly, 2005. "Asarco seeks bankruptcy protection", Arizona Daily Star, August 11, 2005.

<sup>6</sup> Blumenthal, Les, 2006. Asarco leaves legal heartburn. The News Tribune. March 20th, 2006. Accessed at <http://www.wncja.org/documents/news/2006-3-20%20News%20Tribune%20-%20Asarco%20leaves%20legal%20heartburn.doc> on January 30, 2007.

### 1872 Mining Law

The landscape of the western United States is littered with mining claims that survive indefinitely, whether mining occurs or not. The free access to minerals on state, private, county and federal lands under the 1872 Mining Law makes it very difficult to assure land is protected or managed. The 1872 Mining Law also makes it possible for individuals to "lock up" access to the mineral estate, even when there is no real intent to mine.

There is a long history of abuses of the 1872 Mining Law by individuals who have no intention to mine. For instance, in the 1970s, a person named Merle Zweifel filed claims on 600,000 acres of land along the future route of the Central Arizona Project. While he reportedly acknowledged that he would never actively explore for minerals there, Zweifel did apparently make money filing nuisance claims<sup>7</sup>. The federal government had to sue Zweifel to clear the claims placed on the five billion-dollar Central Arizona Project.

In a similar manner, claims were placed for iron ore in the 1970s on Casas Adobes Estates, a subdivision in Tucson. After a costly court battle with the surface owning residents, the claims were successfully contested. Eventually Congress withdrew large areas around Tucson and Phoenix from mineral entry to prevent a recurrence of spurious claims on otherwise valuable lands<sup>8</sup>.

### Management Challenges

Currently at Tucson Mountain Park, we have an estimated 100 remnants of mining exploration. Most of these are small exploration holes with small waste piles. About a dozen involve a mining shaft. Currently, three different abandoned mines are routinely monitored for bat population status in Tucson Mountain Park and two have vandal proof gates installed.

Abandoned mines pose a number of challenges for our management activities. First, they present immediate public hazards. In almost every case the public routinely ignores signage, fencing and even gate barriers to explore the shafts. This is an ongoing concern and management activity. Also, open exploration pits pose similar hazards for cross country hikers, equestrian riders or mountain bikers.

In some cases the mine waste associated with exploration sites may pose environmental hazards. We have situations on several open space properties, including Rancho Seco, where after environmental testing, the area around a site has been fenced to restrict public use as a

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<sup>7</sup> B. Newman, "Never Mined: Merle Zweifel Claims Acres of Mineral Land, But What is He Up To?" Wall Street Journal, Jan. 20, 1972, in Leshy, John. The Mining Law. Resources for the Future. Washington, D.C. p.79

<sup>8</sup> John Lacy, "Conflicting Surface Interests: Shotgun Diplomacy Revisited," "Proceedings of the Rocky Mountain Mineral Law Institute," vol. 22 (1976) in Leshy, John. The Mining Law. Resources for the Future. Washington, D.C. p.80

precautionary action. This also can lead to impacts to localized watersheds and water courses. If there is milling or processing activity associated with abandoned mines, the potential for airborne, surface and subsurface contamination increases. Costs for testing and fencing can easily run over \$15,000 to \$20,000 for an area of mining activity of less than two or three acres. Formal remediation can run into the hundreds of thousands of dollars, or more.

One situation that is seldom discussed as a product of mining activity is that historic mining locations are natural attractions to current weekend miners or rock hounds. Depending on the type of mineral being sought, some sites attract continued and repeated exploration and even limited mining activity because of the presence of past activity. Consequently, some sites never get a chance to restore naturally.

When trying to close mine shafts we also encounter significant costs. If the mine has any historic presence of use we need to do historic surveys. All shafts need to be evaluated for biological values, especially for bats, and special status species under the Sonoran Desert Conservation Plan. A simple shaft can require \$5,000 to \$7,000 just for the baseline survey needs. Depending on the results, the shaft may be fenced, gated, filled in or other approaches to closure appropriate for the location and hazard.

Formal gating of a shaft could run \$10,000 to \$15,000 depending on size, complexity of the gating system and necessity to accommodate bat/wildlife use. This is also if the location allows motorized vehicles access to the shaft. If gating items and personnel need to be flown in the price can double.

### **Public Health Risks**

Active copper mines release other toxic substances in the course of crushing and concentrating the ore-bearing rock. The Environmental Protection Agency's (EPA) Toxic Release Inventory indicates that Phelps-Dodge's Sierrita Mine near Green Valley released 1053 pounds of mercury, and 1,243,048 pounds of lead, in 2004 (Figure 11). The Mission Mine, operated by ASARCO, a subsidiary of Grupo Mexico, emitted 1,211,184 pounds of lead in 2004. It is located near Sahuarita. Over 100 miles of streams in Arizona are considered impaired by excessive copper, which can be toxic to aquatic organisms. Arizona's mines are the largest known sources of impairments for rivers and streams<sup>9</sup>.

Processing methods for copper can enhance the concentration of naturally occurring radioactive materials coming from mines. EPA has compiled data regarding the concentration of radioactive substances in the Arizona copper belt. The results show that certain common mining practices can concentrate soluble pollutants such as uranium and thorium in groundwater<sup>10</sup>. Elevated

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<sup>9</sup> National Assessment Database, Environmental Protection Agency.

<sup>10</sup> U.S. Environmental Protection Agency, 1999. Technologically Enhanced Naturally Occurring Radioactive Materials in the Southwestern Copper Belt of Arizona. Office of Radiation and Indoor Air, EPA 402-R-99-002.

levels of uranium have been detected in groundwater at Phelps-Dodge's mines near Green Valley. EPA and ADEQ are looking into the issue and trying to get Phelps-Dodge to respond.

High levels of sulfate and other non-toxic salts have entered groundwater in Green Valley from the Sierrita Mine. There is no enforceable health standard for sulfate, but it can cause problems with taste and digestion. As a result of concern expressed by Green Valley residents, Phelps-Dodge is providing a temporary replacement for two wells in the sulfate contaminant plume owned by Community Water in June 2005 until a permanent solution is developed and implemented.

Many of the mining facilities also have the potential to generate large amounts of dust (Figures 12-15). Such dust, or PM10, is one of the most serious air quality health concerns in Pima County and can cause a variety of health problems, including breathing difficulties, respiratory pain, reduced lung function, weakened immune system, increased severity of acute bronchitis and asthma, heart attacks and premature death (1 to 8 years).

Pima County has been interested in acquiring the BLM's surplus 540-acre Saginaw Hill property for park purposes since the 1980s because of its excellent location in a growing region of the County, but has been unable to do so because the property includes the toxic remnants of mining activities that began in the late 19th Century and continued into the 1950s (Figures 16-17). A limited environmental assessment conducted for Pima County in 1988 found problematic levels of a number of metals on the Saginaw Hill property, including aluminum, cadmium, copper, lead, and zinc. Acidic vapors were also noted on the site, and a variety of physical hazards were also present, including adits, shafts, test pits, tailings piles, and slag dumps.

A 2005 study conducted by the BLM at Saginaw Hill detected several chemicals of concern (COCs) on the property, including arsenic, lead, antimony, copper, mercury and thallium. The study found that "Concentrations of these metals in waste material significantly exceed all risk-based guidelines and therefore pose a potential threat to human health and the environment." In addition, groundwater is contaminated in the direct vicinity of one of the property's mining sites, raising concerns about impacts to the surrounding area's drinking water. The BLM is actively pursuing the remediation of the site, but even the most bare-bones solution is expected to cost more than \$2 million, and its ultimate efficacy remains in question.

#### **Past Mitigation and Reclamation Inadequate**

Arizona state law requires mines to rehabilitate some of the land surface damaged by mining. But the law allows companies to determine the reclamation costs, which guarantees the costs will be underestimated. In addition, the state does not require the company to put up physical assets, cash, bonds or fully funded insurance policies. The State accepts "corporate guarantees," which are essentially the company's promise to pay. Bankruptcy can mean that taxpayers are left with a company's unfunded reclamation liabilities.

State laws prohibit counties from exerting authority over the mine reclamation costs or activities. In 2006, legislation (HB 2317) was passed to prohibit counties from requiring or regulating reclamation of mines. Counties were previously prohibited from passing zoning ordinances regulating or prohibiting mining.

Pima County is assisting with reclamation efforts. Since 1998, Pima County has worked with ASARCO to build soil and revegetate the Mission Mine waste piles through the use of high-quality biosolids. The University of Arizona's Water Quality Center has been monitoring and evaluating the environmental and health impacts related to the mine tailings reclamation with biosolids. Rapid revegetation of mine tailings is possible with a combination of biosolids and native grass seedings, even without irrigation. Sites revegetated in 1998 and 2000 still have a higher percentage of cover under non-irrigated conditions than is typical for undisturbed Sonoran desert scrub (Figures 18-19)<sup>11</sup>.

While the County's biosolids might help, they are but a "drop in the bucket" of unfunded mining reclamation and mitigation needs. ASARCO's estimated liability for the Mission Mine reclamation and cleanup is around \$415 million, and the land surface from which native cover has been greatly disturbed or removed entirely covers around 11,300 acres.

ASARCO started the Mission Mine near Sahuarita in the 1950s. By 1959, ASARCO had received a lease issued by the Bureau of Indian Affairs (BIA) to extend their operations on to the San Xavier District of the Tohono O'odham Nation. Many environmental laws were passed by Congress in the 1970s, but the federal government has not successfully imposed these laws upon this mining operation. To date, there is no approved mining plan or reclamation plan for the portion of the mine on tribal land, nor is there an aquifer protection permit<sup>12</sup>. The tribe is concerned about the sulfate groundwater contaminant plume and movement of tailings downstream by air and surface water.

**Strategies to Protect the Natural Ecological Resources of County-Owned Property and Protect the Public Health from Adverse Impacts Due to Mineral Exploration and Mining**

There are several strategies the County is undertaking to protect natural open space reserves owned by the County and others in Pima County, as well as to address public health concerns and protect local taxpayers.

1. The County has provided the State Land Department with recommendations on how to administratively reform their mining application review process so that impacts to the value of adjacent State Trust lands are better considered, as well as expanding the environmental review process to match the federal process.

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<sup>11</sup> Pima County Wastewater Management Department, 2006. Pima County Green Valley BNROD Biosolids Land Application, Mine Tailings Reclamation at ASARCO's Mission Complex, April 2006.

<sup>12</sup> There is an IGA between BLM and the State which in theory allows the state to require an APP on tribal lands.

2. The County continues to pursue an appeal of the approval of the Davidson Canyon mineral leases by the State Land Commissioner.
3. The County continues to be actively involved in reviewing and making recommendations on mining applications at both the state and federal level. This includes the proposed Rosemont Mine on Forest Service land in the Santa Ritas.
4. The County is pursuing Congressional withdrawal from mining of certain lands via our Congressional delegation.
5. The County intends to be more involved in the long-term land use planning of lands associated with mining, so that the lands can be planned for an economically beneficial use post mining.
6. The County is cooperatively working with the University on reclamation projects such as the use of biosolids.
7. The County will continue to encourage compensatory acquisition of lands to offset the irreversible losses that come with digging up the land surface through open pit mining. Off-site land acquisitions funded by the mining industry should help build the Conservation Lands Systems for the Sonoran Desert Conservation Plan.

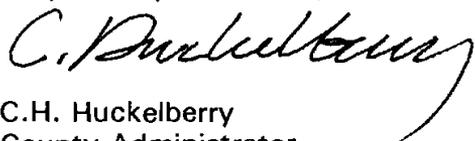
### Summary and Recommendations

In summary, current mining practices and current mining laws are not compatible with the rapidly growing population in this County, the conservation of our diverse sky islands, rare riparian areas, Sonoran Desert habitats, and our strong tourism industry. The legacy of mining in Pima County has negatively impacted our natural open space, public health, and the taxpayers financially. The County has been proactive in addressing these issues, to the extent that we can, through comments to agencies that regulate and authorize mining in Pima County.

Congressman Raúl Grijalva will be holding a hearing at 10:00 a.m. on Saturday, February 24, 2007, in the Board of Supervisors hearing room. The hearing will be on behalf of the Subcommittee on National Parks, Forests and Public Lands, which Congressman Grijalva chairs, and the Subcommittee on Energy and Mineral Resources. The hearing will focus on the proposed mining operation on the Rosemont Ranch and adjoining National Forest lands, and on the 1872 Mining Act generally.

In preparation for this hearing, I respectfully recommend that the Board approve the attached Resolution that addresses issues discussed in this memorandum and reiterates the Board's support for the closing of lands to mineral entry in the Coronado National Forest and lands owned by the County that are subject to federal mineral rights.

Respectfully submitted,



C.H. Huckelberry  
County Administrator

**RESOLUTION NO. 2007-**

**RESOLUTION OF THE PIMA COUNTY BOARD OF  
SUPERVISORS TO WITHDRAW AREAS FROM MINING  
AND MINERAL EXPLORATION**

WHEREAS, filling of mining claims, trespass, mineral extraction, and mineral exploration activities have become a significant threat to our conservation of natural landscapes, wildlife, water resources, and public health; and

WHEREAS, within the last two years, the County has had to commit taxpayer resources to opposing mineral exploration and mineral extraction activities on or adjacent to County natural reserves including Rancho Seco, Six Bar Ranch, Oracle Ridge properties, Bar V Ranch, and Cienega Creek; and

WHEREAS, the County has expended over \$50 million in County bond funds to purchase these properties for conservation; and

WHEREAS, these properties were purchased by Pima County to conserve federally endangered and threatened species, and prevent the future listing of vulnerable species as endangered or threatened; and

WHEREAS, even portions of the County's Tucson Mountain Park are still open to mineral entry and were subject to exploratory activities in the 1980s; and

WHEREAS, the Board of Supervisors passed Resolution 2007-15 on January 16, 2007 opposing the proposed Rosemont Mine in the Santa Rita Mountain Range of the Coronado National Forest, and requesting the withdrawal of certain areas from mineral entry; and

WHEREAS, the Board of Supervisors passed Resolution 2005-124 on June 7, 2005 opposing mining within County reserves and biologically sensitive areas; and

WHEREAS, rapid population growth throughout Arizona, combined with significant tourism and economic development that is dependent on the natural beauty of this State, make the State incompatible with current mining practices and mining laws; and

WHEREAS, current mining practices and mining laws have resulted in inadequate and under-funded mitigation and reclamation in connection with mining activities; and

WHEREAS, inadequate and under-funded mitigation and reclamation have resulted in irreversible impacts to our native fish and wildlife, impacts to water quality and quantity, and visual blight; and

WHEREAS, the taxpayers of this County see few local tax benefits from mining and are instead left with the undue burden associated with air, water and visual pollution from previous mining activities; and

WHEREAS, mining has lead to public health concerns in Pima County, including impacts to ground water in and around the mines in Green Valley, and on Bureau of Land Management land known as Saginaw Hill; and

WHEREAS, in the case of Saginaw Hill, the Bureau of Land Management is left with the expense of assessing the public health impacts from mining activities that occurred historically on the property and remediating such impacts in order to protect public health; and

WHEREAS, 1,299,600 acres of Federal lands in Pima County, made up of the Ironwood Forest National Monument, Organ Pipe National Monument, Saguaro National Park, Las Cienegas National Conservation Area, Buenos Aires National Wildlife Refuge, Cabeza Prieta National Wildlife Refuge, Goldwater Gunnery Range, Pusch Ridge Wilderness Area, Rincon Wilderness Area, Mt. Wrightson Wilderness Area, Baboquivari Peak Wilderness Area, and Coyote Mountain Wilderness Area are already closed to mineral entry subject to existing valid rights at the time of designation; and

WHEREAS, withdrawing from mineral entry the federal lands within the Santa Rita Mountain Range of the Coronado National Forest in Pima County, excluding the Mt. Wrightson Wilderness Area which is already closed to mineral entry, would close an additional 52,000 acres to mineral entry; and

WHEREAS, withdrawing from mineral entry the remaining federal lands within the Coronado National Forest in Pima County, excluding wilderness areas and the Santa Rita Mountain Range, would close an additional 186,000 acres to mineral entry.

NOW, THEREFORE, UPON MOTION DULY MADE, SECONDED AND CARRIED, BE IT RESOLVED THAT:

1. The Pima County Board of Supervisors hereby requests that the Arizona Congressional Delegation initiate the permanent withdrawal, from mining and mineral exploration, of all federal lands within the Santa Rita Mountain Range of the Coronado National Forest in Pima County.
2. The Pima County Board of Supervisors hereby requests that the Arizona Congressional Delegation initiate the permanent withdrawal, from mining and mineral exploration, of the remaining federal lands within the Coronado National Forest in Pima County.
3. The Pima County Board of Supervisors hereby requests that the Arizona Congressional Delegation initiate the permanent withdrawal, from mining and mineral exploration, of all County-owned natural reserves where the federal government owns the subsurface mineral rights.

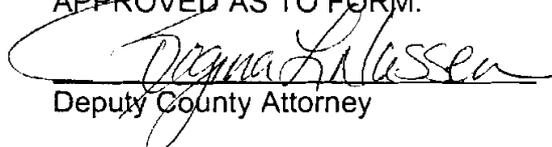
Passed by the Board of Supervisors of Pima County, this \_\_\_\_ day of \_\_\_\_\_, 2007.

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Chairman, Pima County Board of Supervisors

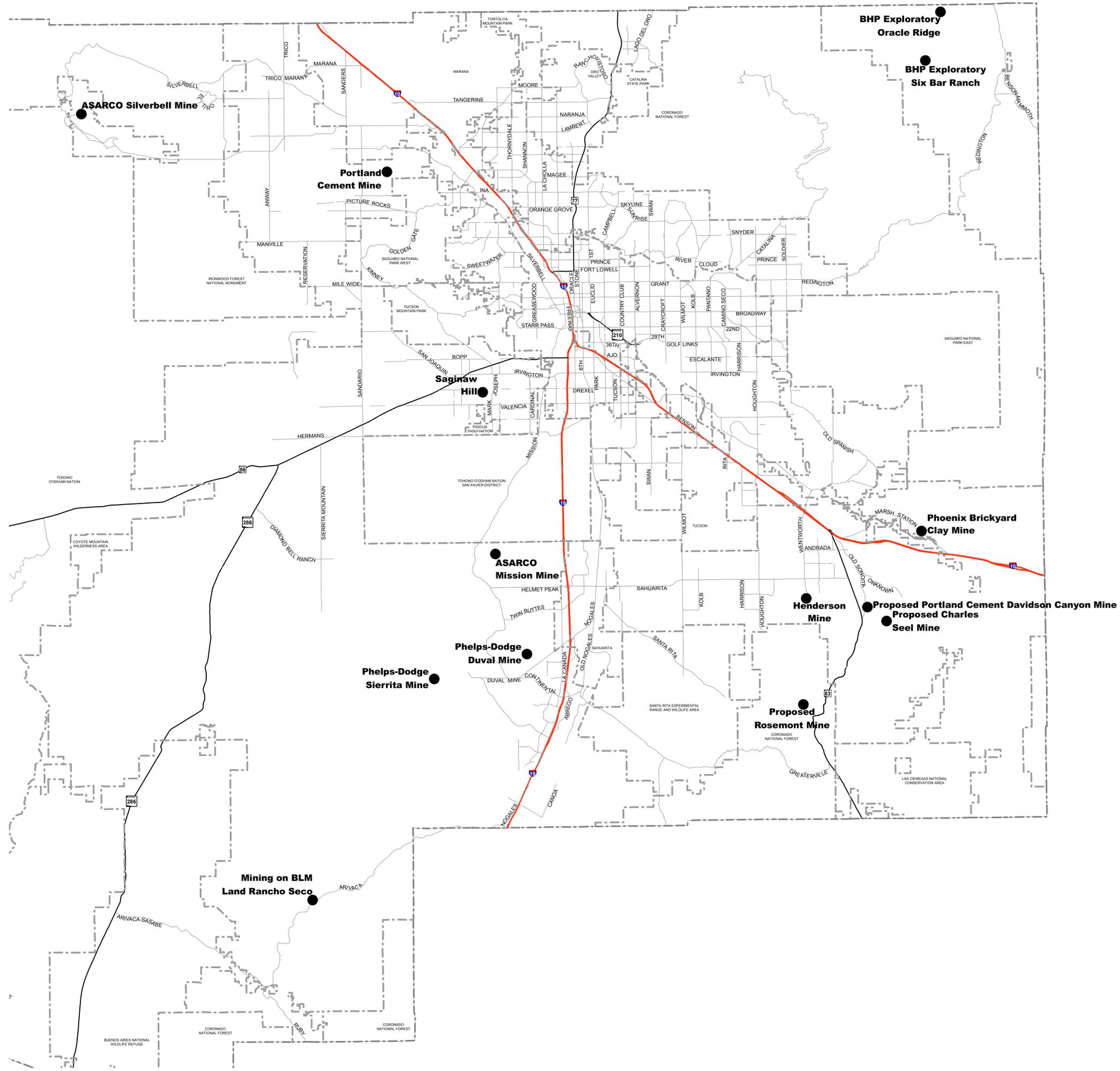
ATTEST:

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Clerk of the Board of Supervisors

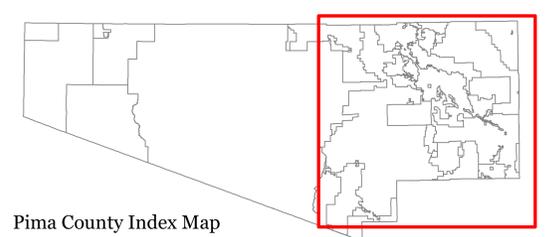
APPROVED AS TO FORM:

  
Deputy County Attorney

# Mining Activities in Eastern Pima County



- Mining Activities
  - Administrative Boundaries
- ### Major Roads
- Interstate
  - State Highway
  - Major Street



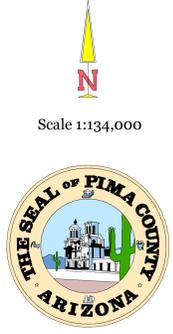
Pima County Index Map  
Index Map Scale 1:1,500,000

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Scale 1:134,000

**Figure 1. Davidson Canyon within the County's Bar V Ranch**

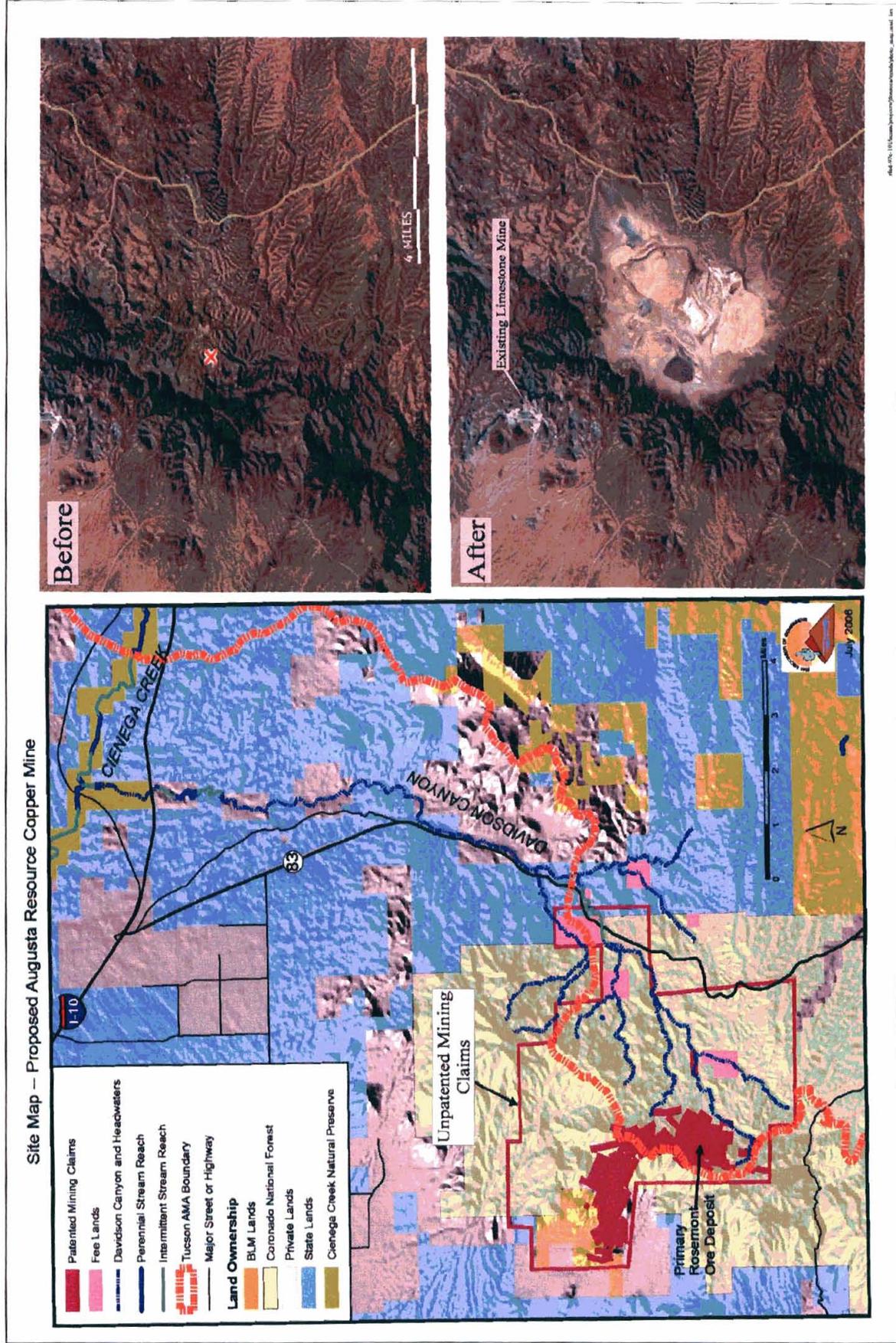


Photo by Gloria Browne

**Figure 2. Mining Activities on BLM lands within the County's Rancho Seco**



Figure 3. Proposed Rosemont Mine



**Figure 4. View of the Eastern Slopes of the Santa Ritas from Scenic Route 83**



Photo by Lanie Levick

**Figure 5. Same view as above, with Silverbell Mine (similar size as proposed Rosemont Mine) placed on photograph**



Photo by Lanie Levick

**Figure 6. BHP Mine at San Manuel**



**Figure 7. Silverbell Mine**



**Figure 8. Clay Pit Adjacent to Cienega Creek**



View of the clay pit and pond (lower right) adjacent to Cienega Creek. The flow arrow points to the direction of the run-off from the clay mine. The visible, lighter colored fine silts from the mine are carried to Cienega Creek.

**Figure 9. ASARCO Mission Mine**



**Figure 10. Phelps-Dodge Duval Mine**



**Figure 11. Phelps-Dodge Sierrita Mine**



**Figure 12. Dust at ASARCO Mission Mine (1)**



**Figure 13. Dust at ASARCO Mission Mine (2)**



**Figure 14. Dust at ASARCO Mission Mine (3)**



**Figure 15. Dust at ASARCO Mission Mine (4)**



**Figure 16. BLM Saginaw Hill Property (1)**



Photo by Steve Anderson

Hillside impacted by mining activity with slag heap, Saginaw Hill property.

**Figure 17. BLM Saginaw Hill Property (2)**



Photo by Steve Anderson

Contaminated site warning, Saginaw Hill property

**Figure 18. ASARCO Mission Mine Tailings (Before)**



Mine tailings unamended. (Photo: I. Pepper, University of Arizona)

**Figure 19. ASARCO Mission Mine Tailings (After)**



Mine tailings three years after biosolids amendment. (Photo: I. Pepper, University of Arizona)