

**2006  
ANNUAL REPORT  
MINING ACT RECLAMATION  
PROGRAM**

**TO THE NEW MEXICO MINING COMMISSION**



**Energy, Minerals and Natural Resources Department  
Mining and Minerals Division  
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## **COVER PHOTO**

The annual report cover photo was taken at the Tyrone Mine in October 2006. The photo depicts an emergent wildflower, a Mexican Hat (*Ratibida columnaris*). This wildflower was one of many species of forbs seeded into the cover of the 3X tailings impoundment at the Tyrone Mine. Phelps Dodge has been conducting large-scale reclamation for three years at the mine; a number of areas are experiencing their first and second year of plant growth. The photo represents the coarse rocky nature of the Gila Conglomerate, an overburden material being used by Phelps Dodge to construct a rooting medium, or cover material, for placement over acid mine tailings materials. Gila Conglomerate is placed to a depth of 2 feet over the tailings and is ripped, mulched and seeded with a mixture of forbs, grasses, and shrubs. Remnants of the hay mulch can be seen in the cover material. The mulch is used to stabilize soils, protect seeds and provide organic matter in the cover material. Soils such as these are similar to native soils found around the Tyrone Mine, which are rocky, poorly developed and lacking in organic matter.

The reclamation work at the Tyrone Mine facility has been an ongoing group effort involving individuals from the Mining and Minerals Division, Phelps Dodge staff, their consultants, and the New Mexico Environment Department. Phelps Dodge has spent approximately \$37 million on reclamation efforts since August of 2003, including the reclamation of the tailings and of other facilities. These reclamation activities are discussed further in Part 3 of this report.

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## **1. INTRODUCTION**

This report summarizes activities regulated by, and related to, the Mining Act Reclamation Program (MARP) of the New Mexico Mining and Minerals Division (MMD). Part 13 of the New Mexico Mining Act Rules (the Rules) requires an annual report be provided to the New Mexico Mining Commission. The report is to contain a general description of mining operations, reclamation practices, and production figures for the State.

Specifically, this report identifies activities related to the permitting and regulation of mines, under the Mining Act, for the two-year time period from January 2005 through December 2006. It also provides tables identifying all mining operations that have obtained or submitted a permit application under the Mining Act Reclamation Program (Program) since its inception in 1994.

The report includes tables with production figures, by commodity, for New Mexico mines that were active during the 2005 calendar year, the most recent year that statistics are available. Mine operators are required to report these figures to MMD each calendar year. The production figures include statistics from all mines active in New Mexico, not just those regulated under the Mining Act.

Additionally, the report discusses reclamation activities and practices related to specific mines in the state of New Mexico. The statistics addressing reclaimed versus unreclaimed acreage originate from data provided to MMD in annual reports provided by the mine operators and identifies activities which have taken place during the period from January 1, 2005 to December 31, 2005.

The Mining Act Reclamation Program is in the process of implementing two new initiatives that will improve its regulatory program. The first initiative is to integrate Geographical Information Systems (GIS) into MARP work processes and its database. The other initiative involves training MARP staff in the technical issues related to uranium mine reclamation and radiation health physics. These two initiatives will be discussed at greater length in subsequent sections of this report.

Finally, Section B of 19.10.13.1302 NMAC states that the report shall include proposed amendments to the Rules, if any. No Rule changes were made during 2006, and MMD is not currently requesting the Commission to evaluate proposed amendments. However, MMD may propose changes during calendar year 2007.

## **2. MINING OPERATIONS IN THE STATE OF NEW MEXICO AS OF DECEMBER 2005**

The Mining Act Reclamation Program was established in the spring of 1994. Since then, all mining operations falling under the definition of “existing” mines – that is, operations having operated between January 1, 1970 and June 18, 1993 – have been fully permitted, including an approved closeout plan and financial assurance, with the exception of those mines shown in Table 3.

A number of new mines – that is, operations initiating activity after June 1993 – have been added to the list of permitted mines. These new mines all fall under the category of minimal impact exploration and mining operations. Exploration operations are small extractive operations, typically under 5 acres, involved in the sampling of ore bodies prior to full-scale mine development. This year has seen a significant increase in the number of new exploration applications involving uranium exploration. General Permit operations cannot excavate materials greater than 200 cubic yards per year, or disturb greater than 2 acres of surface at any one time. The General Permit category is one typically used by hobby miners. The Exploration and General Permit categories, totaling 243 permits, make up the largest number of permitted operations under the Mining Act Reclamation Program. All mining operations that have submitted permit applications under the categories of Regular Existing, Minimal Impact, Exploration and General Permit are identified in Appendix No. 1 in Tables 7 through 11. Not all of these operations have received a permit, so total numbers will be different from the numbers provided for permitted sites in Table 1. Although some of the applications have not been approved, the Program spends a significant amount of time evaluating and developing these permits and conducting enforcement actions related to the regulation of these operations.

**Table 1. Total Mining Operations Approved Since 1994**

<b>Type of Operation</b>	<b>Description</b>	<b>Number of Operations</b>
Regular Mining	>10 acres of disturbance	29
Minimal Impact Existing Mining	<10 acres of disturbance	22
Minimal Impact New Mining	<10 acres of disturbance	19
Regular Exploration	> 5 acres of disturbance	2
Minimal Impact Exploration	<5 acres of disturbance	98
General (Recreational)	<200 cubic yards/yr of disturbance	143

**Total Mining Operations Permitted 313**

Table 1 provides numerical figures of all the mine operations, by category, that have received permits since 1994. Table 2 identifies specific types of permit applications submitted to MMD during 2006, and identifies those applications that have been approved and those that are still pending. Modifications and Revisions can be just as time consuming in processing and approving

as initial permit applications, and are often much more complicated than minimal impact permit applications. One revision that falls into this category is the new Questa Mine Closeout Plan. This Closeout Plan is a major revision to the Questa Mine permit, involving a detailed reclamation plan, updating financial assurance, on-going studies and extended negotiations with the operator, other agencies and the public.

**Table 2. 2006 Approved and Pending Permit Applications**

Type of Operation	Description	Number of Operations		
		Pending	Approved	Denied
Regular Mining	>10 acres of disturbance	3	0	0
Minimal Impact	<10 acres of disturbance	1	0	0
Exploration	<5 acres of disturbance	8	10	0
General Permits	<200 cubic yards/yr of disturbance	0	11	0
Revisions	Revision to an Existing Permit	2	2	0
Modifications	Modification to an Existing Permit	6	12	0

Table 3 identifies regular existing mining operations that have not yet received approval for their Closeout Plans. The two United Nuclear Corporation mines in Table 3, the St. Anthony Mine and the Section 27 Mine, were involved in a lengthy court battle and are now working with MMD to develop permits. Another older uranium property, the JJ No. 1 Mine, initiated permitting in 2006 after it was determined that the property fell under the Mining Act. These three permits, including closeout plans, should be completed in calendar year 2007. Two other operations, the Clodbuster Mine and the Challenge Mine, have been issued several notices of violation over the years and are not on track to obtain permits as of the date of this report. The General Pumice Mine has also been issued a number of violations over the years for lack of a permit. The operation is now on track for permitting, and should have a permit by 2007. The Nacimiento Mine is an abandoned, open-pit copper operation near Cuba, New Mexico. The owner is deceased, and a responsible party has not yet been identified for the reclamation of the site. Portions of the Nacimiento Mine are situated on State and Federal property. The United States Forest Service, State Land Office, and New Mexico Environment Department are currently working together, with limited CERLA funds, to do a small amount of remediation.

**Table 3. Existing Mining Operations without Approved Closeout Plans as of 2006**

<b>Mine Name</b>	<b>Operator</b>	<b>Disturbed Acres</b>
St. Anthony Mine	United Nuclear Corporation	430
Section 27 Mine	United Nuclear Corporation	15
JJ No. 1 / L Bar Mine	Rio Tinto Energy	11
Clodbuster Mine and Mill	Agronics, Inc.	27
General Pumice Mine	City of Espanola	10
Challenge Mine and Mill	Dick Manning	17
Nacimiento Mine	Leaching Technology, Inc.	611



### **3. RECLAMATION PRACTICES UNDER THE NEW MEXICO MINING ACT**

A total of 30 sites, under permit with the Mining Act Reclamation Program, have undergone some form of reclamation, two more sites than last year. In some cases, the entire site has been reclaimed; in others, a portion of the site has undergone reclamation. Once reclamation has taken place, mine operators must wait 12 years before they are eligible to apply for a complete release from the Act's requirements. However, the operator is allowed to apply for a partial financial assurance release, once per year, per permit. Several operators have received partial release for work performed towards final reclamation for activities such as performing earthwork to achieve a post-mine contour, placing cover over reclaimed areas, and performing demolition work at the site.

Operations where reclamation has been completed on the entire site include: Cunningham Hill Mine; Las Conchas Unit of the Las Conchas / El Cajete Mine; Boston Hill Mine; San Pedro Mine and Mill; KB Mine; KM Mine; Jersey Lily, Snowflake and Virtue Mines; Brockman Mine; Chino Limestone Mine; Hiawatha and Little Jim Mine; Deming Jigging Mill; Old Stope Leach Mine; Velarde Mill; Lordsburg Mine; Mesa Verde Resources Mill, and Pinos Altos Mine. Two of these mines have received a complete release for reclamation or achieving the post-mine land use under the New Mexico Mining Act: the Boston Hill Mine, in Grant County, and the Mesa Verde Resources Mill, in Sandoval County. The Boston Hill Mine received a complete release for achieving the post-mining land use in 2002, and Mesa Verde Resources Mill in 2005. The Cunningham Hill Mine, owned by LAC Resources Inc., recently applied for complete release on a large portion of their mine that was reclaimed 12 years ago.

The Mining Act Reclamation Program encourages innovative and experimental reclamation, particularly at sites where steep slopes and/or acid-producing materials present reclamation challenges. Four large operations currently permitted under the Mining Act Reclamation Program have committed to the construction and evaluation of test plots. Molycorp's Questa Mine, Phelps Dodge's Tyrone and Chino Mines, and GCC Rio Grande's Tijeras Mine all have successful on-going test plot programs at their mines. This year, Phelps Dodge constructed test plots at the Continental Mine. The test plot programs are evaluating seeding rates, fertilizer rates, soil amendments, and infiltration rates using various soil covers and depths.

Exploration and general permit operations require reclamation within 2 years of project completion. Unless renewed, exploration and general permits are valid for only one year. The acreage from reclamation of these small sites is not included in the numbers provided in Table 4.

The overall disturbed acreage under permit with the Mining Act Reclamation Program is 22,827 acres. The total number of acres reclaimed throughout the entire history of the Program, through calendar 2005, is 1,532 acres. Table 4 shows the approximate number of acres disturbed and reclaimed, as of December 2005, for each mine under permit with the Mining Act Reclamation Program. Based on information supplied by operators in their 2005 annual reports, a total of 574 acres were reclaimed in 2005. The biggest contributor to this total, as in 2004, was the Tyrone Mine, where 394 acres of reclamation took place in 2005. The operator, Phelps Dodge, has reclaimed a total of 548 acres since starting reclamation in 2003.

During calendar year 2006, the Phelps Dodge Mining Company continued a large-scale project addressing the cleanup and reclamation of tailings ponds and waste rock piles at their Tyrone Mine in Grant County. The project includes the completion of reclamation at the No. 2 tailings pond; the Nos. 1, 1C, and 7A stockpiles; and the mill concentrator. By the end of 2006, Phelps Dodge will have initiated reclamation on approximately 300 acres associated with the 1A tailings pond, and approximately 300 additional acres associated with the No. 1 tailings pond. Phelps Dodge is on schedule to complete, in 2007, the reclamation of over 100 acres associated with the 1C outcrops, approximately 100 acres at the 7A stockpile, 30 acres associated with the mill and concentrator, 400 acres at the No. 2 tailings pond, and 150 acres at the No. 1 stockpile. Phelps Dodge has spent a reported \$20 million on reclamation activities at the Tyrone Mine during calendar year 2006; a reported \$17 million was spent at Tyrone during calendar year 2005. Since the inception of reclamation activities in 2003, Phelps Dodge has spent a reported \$37 million on reclamation activities.

In 2005, Molycorp completed mitigation work on the Goat Hill North waste rock pile. The work was performed to address potential stability issues related to the rock pile. The project has been the focus of public interest since June 2003. The Mining Act Reclamation Program took the lead role in approval of the mitigation plans and in oversight of the project. Molycorp moved massive amounts of rock to establish a buttress at the base of the facility, improving the overall stability of the waste rock pile. Molycorp plans to establish test plots on portions of the re-graded Goat Hill North rock pile slopes. The rock pile will continue to be monitored for movement and to verify the success of the mitigation efforts. Goat Hill North still needs to undergo further backfilling and grading, cover material placement, and seeding to meet ultimate reclamation requirements.

In 2005, a Failure Modes Analysis evaluation of Questa's Front Waste rock piles was conducted by a group of geotechnical experts. This evaluation identified mitigation projects for the Front Waste rock piles that are necessary to reduce potential impacts from surface debris flows to Highway 38 and to the Red River. In the fall of 2006, to address these potential impacts, Molycorp started upgrading its protection berm system situated at the toe of the rock piles just above Highway 38. Molycorp is currently working on this project and anticipates completion by the end of 2006.

**Table 4. Total Number of Acres Disturbed and Reclaimed as of December 2005**

<b>Permit Number</b>	<b>Name</b>	<b>Permit Type</b>	<b>Disturbed Acres To Date</b>	<b>Reclaimed Acres To Date</b>
BE001RE	Tijeras Mine and Mill	Regular Existing	504	22
CA002MN	Deadwood / Last Chance Mine	Minimal Impact New	2	0
CA003ME	Hiawatha And Little Jim Mine	Minimal Impact Existing	2	2
CI002RE	Mount Taylor Mine	Regular Existing	66	0
CI003MN	ANP No. 2 Mine	Minimal Impact New	2	0
CI004MN	Haskani Mine	Minimal Impact New	10	8

<b>Permit Number</b>	<b>Name</b>	<b>Permit Type</b>	<b>Disturbed Acres To Date</b>	<b>Reclaimed Acres To Date</b>
CI005RE	Tinaja Pit Mine	Regular Existing	40	0
CI006MN	Ray Claims No. 4 and No. 6 Mine	Minimal Impact New	6	0.5
CI007RE	JJ No. 1 / L Bar Mine	Regular Existing	11	0
GR001RE	Pinos Altos Mine	Regular Existing	9	9
GR002RE	Continental Mine and Mill	Regular Existing	860	10
GR006RE	Chino Limestone Quarry Mine	Regular Existing	55	55
GR007RE	Little Rock Mine	Regular Existing	88	0
GR008RE	Jersey Lily, Snowflake and Virtue Mines	Regular Existing	22	22
GR009RE	Chino Mine and Mill	Regular Existing	9,416	0
GR010RE	Tyrone Mine and Mill	Regular Existing	7,440	548
GR011ME	Summit Mine	Minimal Impact Existing	3	0
GR012MN	KB Mine	Minimal Impact New	41	41
GR018ME	Banks Mine (Lost New Summit No. 1 Mine)	Minimal Impact Existing	3	0
GR020RE	Georgetown Mine	Regular Existing	2	2
GR025ME	Mathis Lime Quarry Mine	Minimal Impact Existing	5	0
GR028RE	Center Mine	Regular Existing	5	0
GR029ME	Mount Royal Mine and Mill	Minimal Impact Existing	1	0
GR030ME	Chemical Lime Mine & Mill	Minimal Impact Existing	10	0
HI001RE	Lordsburg Mine and Mill	Regular Existing	15	15
HI002RE	Brockman Mine	Regular Existing	40	40
HI004MN	KM Mine	Minimal Impact New	9	9
HI008ME	Volcano Mine	Minimal Impact Existing	8	0
LI001ME	Warner Gulch Placer Mine	Minimal Impact Existing	2	2
LI005ME	Capitan Iron Mine	Minimal Impact Existing	11	0
LU001RE	Deming Jigging Plant	Regular Existing	16	16
LU008RE	Cyprus Deming Tailings Impoundment	Regular Existing	20	20
LU009RE	Asarco Deming Mill	Regular Existing	56.5	0
MK002RE	Section 35 Mine	Regular Existing	40	30
MK003ME	Star Lake Mine - Menefee	Minimal Impact Existing	3	2
MK005RE	Section 27 Mine	Regular Existing	15	0
MK006RE	St. Anthony Mine	Regular Existing	430	0

<b>Permit Number</b>	<b>Name</b>	<b>Permit Type</b>	<b>Disturbed Acres To Date</b>	<b>Reclaimed Acres To Date</b>
MK007ME	Star Lake Mine – Mesa Verde	Minimal Impact Existing	22.7	11.6
MK008ME	Pueblo Alto Mine	Minimal Impact Existing	10	7
MK009RE	Old Stope Leach Mine	Regular Existing	251	251
MK010MN	U-Mate Mine	Minimal Impact New	2	0
MK011MN	Morningstar Mine	Minimal Impact New	14	12
OT002MN	B.O.W. Mine	Minimal Impact New	0	0
RA001ME	Northstar Mine	Minimal Impact Existing	5	0
RA003ME	Cullum Pumice Mine	Minimal Impact Existing	20	0
RA004RE	Rocky Mountain Mine	Regular Existing	83.5	0
RA005RE	Velarde Mill	Regular Existing	27	0
RA006ME	General Pumice Mine	Minimal Impact Existing	10	0
SA001RE	Las Conchas / El Cajete Mine	Regular Existing	33	17.5
SA004MN	Copar South Pit Mine	Minimal Impact New	9	3
SA005ME	Menefee Mill	Minimal Impact Existing	9.7	0
SA009MN	Eagle Mesa Mine	Minimal Impact New	3	0
SA011MN	San Luis Mine	Minimal Impact New	5	0
SF001me	San Pedro Mine and Mill	Minimal Impact Existing	9.9	0
SF002RE	Cunningham Hill Mine	Regular Existing	307	289
SF003ME	Silver Silica Mine	Minimal Impact Existing	3	0
SF006ME	CR Minerals Mill	Minimal Impact Existing	5	0
SI001ME	St. Cloud U.S. Treasury Mine	Minimal Impact Existing	6	2
SI005MN	Burbank Canyon Mine	Minimal Impact New	8	0
SI006RE	Zeolite Mine and Mill	Regular Existing	67	12
SI007ME	Midnight Mine	Minimal Impact Existing	4	0
SO001RE	Socorro Perlite Mine and Mill	Regular Existing	160	41
SO002MN	Sais Quarry Mine	Minimal Impact New	1	0
TA001RE	Questa Mine and Mill	Regular Existing	1,979	21
TA002RE	El Grande Mine and Mill	Regular Existing	170	0
TA003RE	U. S. Hill Mine	Regular Existing	49	11.5
TA005RE	No Agua Mine and Mill	Regular Existing	276	0
VA001ME	Lucero Quarry Mine	Minimal Impact Existing	9	0

**TOTAL ACREAGE:**

**22,827 1,532.10**

#### **4. MINERAL PRODUCTION FIGURES FOR NEW MEXICO IN 2005**

Summary information on all major mineral commodities produced in the state in 2005 is provided in Table 5. Confidentiality laws do not allow production values specific to a mining operation to be made public. Therefore, we have provided production values by commodity, and not by a specific mining operation. Total production for commodities with less than four producers must also be held confidential, and these values are included in mineral industry totals. Not all commodities listed come under the Mining Act, but they are included for comparison and to provide one comprehensive list of all minerals produced in New Mexico. For example, some of the operations that are classified as aggregate minerals do not fall under the Mining Act's jurisdiction. Potash and coal mines do not fall under the Mining Act. Coal operations are permitted under the New Mexico Surface Coal Mining Act. Potash operations are not regulated under either act.

Over \$1.8 billion worth of minerals were extracted in New Mexico during 2005, breaking the previous production value record of \$1.7 billion in 1995. Higher commodity prices and increased production have driven an almost 50 percent increase in mineral production values from 2003 to 2005. If energy resources (coal and uranium) are eliminated, the production value for all non-energy minerals is \$1.19 billion – a 29 percent increase from 2004 and a 98 percent increase from 2003. These trends have continued in 2006 as commodity prices have continued to remain high.

Coal, which reached its second highest year for production and production value in 2005, remained the leading commodity in New Mexico for production value, revenue generation and payroll. Molybdenum and potash both broke previous production value records in 2005. For the second straight year, New Mexico has seen a significant increase in production, production value and employment in the copper sector. Production value and payroll for industrial minerals were at record highs in 2005. Aggregate production, production value and payroll also broke previous records.

The total number of employees in the mining industry topped 6,000 in 2005. This is a 5 percent increase from the previous year. Copper overtook coal as the largest employer in the mining industry in New Mexico in 2005 – copper employment increased 33.8 percent and payroll increased 39.5 percent. In the molybdenum sector, direct employment has increased by 31.1 percent, contract employment has doubled and payroll has increased 8.2 percent since 2001. New Mexico uranium employment is at a ten-year high, due to increased reclamation activities at Rio Algom's Ambrosia Lake operations. There are no active uranium mines in New Mexico at this time. Employment in industrial minerals, aggregate, and potash all declined in 2005.

In 2005, reclamation employment doubled to 399, the highest reported reclamation employment on record. Reclamation employment at uranium and industrial mineral operations doubled; Aggregate and stone operations experienced a four-fold increase in reclamation employment. Copper reclamation employment increased, as a result of Phelps Dodge's concurrent reclamation activities at Tyrone Mine.

The recent trend of increased contract employment continued in 2005.

There have been an average of 225 registered active mining operations in the State of New Mexico in recent years. In 2005, active operations included five coal mines, three potash mines and four potash mills, one molybdenum mine and mill, three major copper mines and related concentrators and SX/EW plants, one copper smelter, 23 industrial mineral mines and 20 industrial mineral mills, and 195 stone and aggregate operations. Industrial mineral and stone and aggregate operations located on Indian Lands are not included in these numbers. Since 1998, the number of registered operations has increased by about 60, almost all in the industrial mineral and aggregate categories.

According to U.S. Geological Survey (USGS), New Mexico ranked sixteenth in 2005 when ranking states by the production value of non-energy minerals. Our state produces 2.17 percent of the value of the U.S. total non-energy minerals. The principal minerals in descending order of value are copper, potash, molybdenum, construction sand and gravel, and portland cement. New Mexico's national ranking jumps to seventh for per capita production value. Nearly 450 dollars' worth of minerals is produced annually for every New Mexican.

**Table 5. Mineral Production, Production Value, Rank, Employment, Payroll & Revenues, 2005**

Mineral	Production <sup>1</sup>	Production Rank <sup>2</sup>	Production Value \$	Employment <sup>3</sup>	Reclamation Employment <sup>4</sup>	Payroll \$ <sup>5</sup>	Revenues \$ <sup>6</sup>
Coal	29,650,833	11	\$ 664,416,940	1,504	111	\$ 102,421,067	29,917,449
Copper	290,607,027	3	\$ 473,215,363	1,678	80	\$ 53,282,124	2,861,402
Gold	9,764	10	\$ 4,342,969	0	0	-	241,828
Iron	-	-	\$ 0	2	0	-	-
Industrial Minerals <sup>7</sup>	2,466,281	-	\$ 200,871,063	600	12	\$ 24,365,057	910,418
Aggregate <sup>8</sup>	20,014,987	25	\$ 128,730,636	1,161	113	\$ 20,986,675	1,863,724
Magnetite	29,246	-	\$ 352,198	0	0	-	-
Molybdenum	4,069,790	6	\$ 103,267,579	275	16	\$ 10,820,427	-
Potash <sup>9</sup>	988,782	1	\$ 282,710,833	926	0	\$ 57,580,288	4,672,845
Silver	203,672	10	\$ 1,484,867	1	0	-	6,658
Uranium <sup>10</sup>	-	-	\$ 0	71	67	\$ 1,332,000	240,000
<b>TOTAL</b>			<b>\$ 1,859,392,448</b>	<b>6,218</b>	<b>399</b>	<b>\$ 270,787,638</b>	<b>40,714,324</b>

<sup>1</sup> Production for coal, industrial minerals, aggregate, magnetite and potash is reported in short tons; copper and molybdenum in pounds; gold and silver in troy ounces.

<sup>2</sup> Production rank is based on production value in relation to other U.S. states. Sources: Coal, Energy Information Administration, Department of Energy ([www.eia.doe.gov](http://www.eia.doe.gov)); Metals, potash, industrial minerals and aggregate, Mineral Resources Program, United States Geological Survey (<http://minerals.er.usgs.gov/>).

<sup>3</sup> Category includes direct and contract employees. Gold, silver and magnetite are byproducts of copper production. Employment and payroll for these commodities are included in the copper numbers.

<sup>4</sup> Reclamation employment is included in total employment numbers.

<sup>5</sup> Payroll is for direct employment and does not include contract employees

<sup>6</sup> Value reflects federal and state revenues. State revenue includes royalties and rentals from state trust land mineral leases and severance, resources excise and energy conservation tax revenues. Federal revenue (fiscal year 2005) includes 50% state share of federal royalties. Sources: State data, State Land Office (<http://www.nmstatelands.org/>) and New Mexico Taxation and Revenue Department (<http://www.state.nm.us/tax/>); Federal data, Minerals Management Service (<http://www.mms.gov/>).

<sup>7</sup> Category includes gypsum, perlite, salt, limestone, calcite, dimension stone, silica flux, clay, humate, scoria, pumice, mica and zeolites.

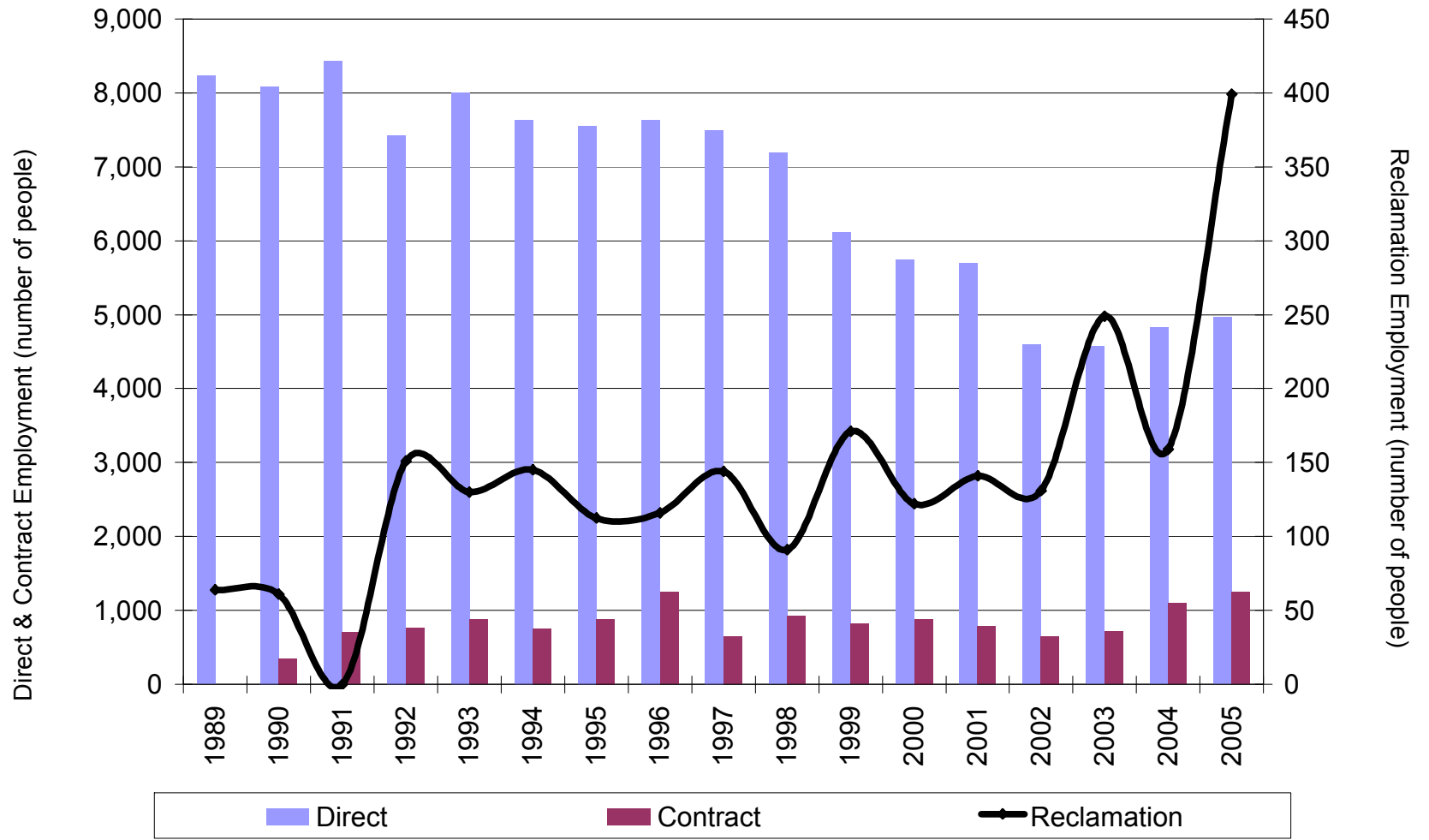
<sup>8</sup> Category includes caliche, clay and shale, crushed rock, flagstone, gravel, limestone, red dog, rip rap, sand, scoria, topsoil/dirt and travertine.

<sup>9</sup> Production is K<sub>2</sub>O mill production.

<sup>10</sup> Employment and payroll numbers are for permitting, care and maintenance and reclamation activities.

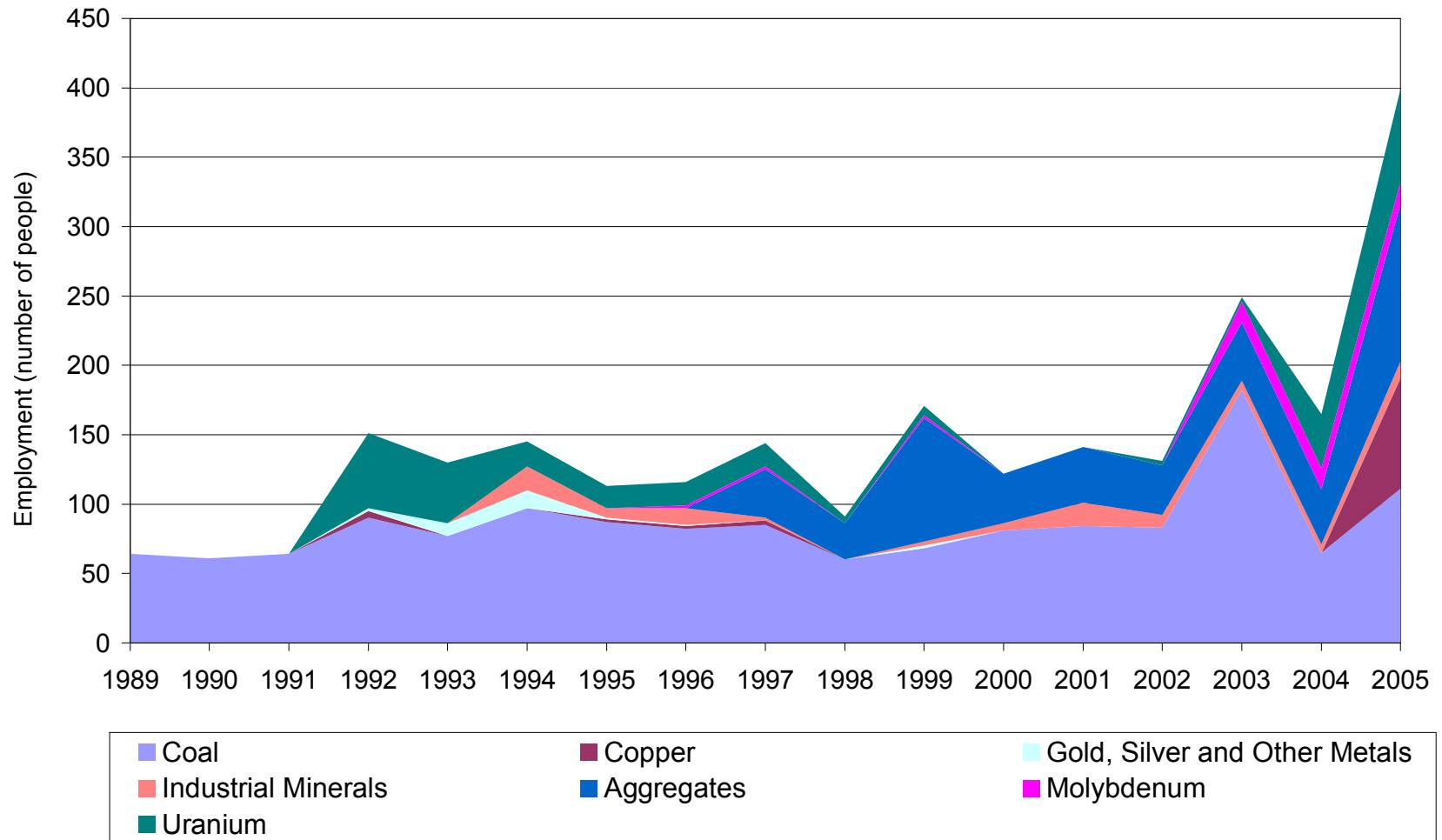
Source: Mine Registration Program, Mining and Minerals Division, Energy, Minerals and Natural Resources Department, unless otherwise noted.

Figure 1. Mineral Industry Employment, 1989 - 2005





**Figure 2. Mineral Industry Reclamation Employment, 1989 - 2005**



## **5. FINANCIAL ASSURANCE UPDATE**

The types and amounts of financial assurance provided to the State of New Mexico, by mining operators who have obtained approved permits and closeout plans, is summarized in Table 12 in Appendix No. 2. The forms of financial assurance include: surety bonds, cash, letters of credit, collateral (real estate), and third-party guarantees. Financial assurance posted with MMD, to date, totals over \$651 million.

## **6. AMENDMENTS TO THE NEW MEXICO MINING ACT RULES**

The Mining and Minerals Division petitioned the Mining Commission, in 2005, for a change to the Mining Act Rules regarding fees. These changes included a renewal of the existing fee structure, a change to the annual fee due date from June 30<sup>th</sup> to April 30<sup>th</sup> of each year, and a surcharge of 75 percent to operations over 500 acres. The MMD petition was heard and approved by the Commission on November 16, 2005.

MMD did not petition the Mining Commission in 2006 for any rule changes. However, MMD may propose changes in calendar 2007.

## **7. GEOGRAPHICAL INFORMATION SYSTEM (GIS) INITIATIVE**

The Mining Act Reclamation Program implemented a Geographical Information System (GIS) initiative directly related to its regulatory activities. MARP is now requesting and integrating geospatial information from mine operators into the permitting process. The GIS initiative also involves the active collection of geospatial data by program staff. The goals of this initiative are to enable MARP permit leads to more accurately track disturbed and reclaimed areas of mine sites and to increase work efficiency by utilizing geospatial information in permitting actions. Where appropriate, the information will be available to the public to increase public access and understanding of state permitting activity.

Permit leads are currently using global positioning systems (GPS) to gather mine location data during inspections, creating a complete system of permitting details over time throughout the state. Permit leads will utilize GPS technology in the field for navigational purposes and to identify specific sampling sites. During the course of inspections, program staff are tracing the perimeter of both mine disturbances and reclamation areas and are learning how to download and manipulate this information to create geospatial polygons and maps. Overlaying these polygons on permit boundary maps, aerial photographs, topographic maps, land-use maps, and other datasets can aid the permit leads with visual inspections of a mine and with determining compliance of permit requirements.

The geospatial information gathered will ultimately be utilized as an intranet application (Autodesk MapGuide), providing program staff with easy access to the resulting maps and to the most current information as it is acquired. Test plots and sampling sites, used to measure the effects of specific reclamation treatments, can be more comprehensively monitored for changes over time using the geospatial data.

Currently, mine operators are required to provide information concerning disturbed areas and reclaimed areas (pre- and post-treatment) to MARP in their annual reports. The Program is now requesting that these maps be submitted to MARP in a digital format compatible with the MMD GIS structure. Maps of mine features and areas created as AutoCAD or ESRI shape files are the most compatible with the MARP GIS. The Program advocates direct communication with the mapping specialists of interacting groups to facilitate the appropriate exchange of data in a compatible datum and coordinate system. Maps overlaid by date within a GIS make it easier to see the progression of reclamation and the relationships of features, such as hydrology, topography and mine structures. The GIS approach to sharing information will make the exchange of information more efficient between the regulating agencies and operators.

MARP intends to provide the public with general permit information and mine locations. A GIS product, intended for public viewing and use, is an interactive web-based map of mine locations that would include linked photographs and general mine information. A preview of this map can be seen in Appendix No. 3.

## **8. URANIUM MINE PERMITTING INITIATIVE**

With the recent renewed interest in uranium exploration and mining in New Mexico, MARP is anticipating the need to be prepared for increased uranium permitting activities. Within the past year, MMD has seen the number of uranium exploration permit applications jump from zero to five. To date, two exploration applications have been approved, and three are still pending approval. This is the first year, since 1998, that the Program has received applications for uranium exploration projects. The increase in exploration applications has been driven by substantial increases in the price of uranium, from \$15 a pound, in January 2004, to over \$63 a pound, in December 2006.

The Mining Act Reclamation Program has jurisdiction over exploration and conventional uranium mining activities, but does not cover in-situ leach uranium mining. The Mining Act exempts mining activity that is regulated by the Nuclear Regulatory Commission (NRC). The NRC regulates in-situ leach operations; therefore, they are exempt from the Mining Act.

This year, MARP has implemented an initiative to increase the staff's knowledge and understanding of the unique technical issues associated with the reclamation of uranium mines. All uranium mining is expected to create surface disturbances. However, with conventional uranium mining, the impacts can include radiologic hazards exposed at the surface during and after mining. The MARP staff are being trained to understand the potential radiologic hazards by being on-site at a mine, as well as the technical issues associated with reclaiming disturbed land that may be impacted with radiologic hazards. The exposure to Uranium-238, Radium-226, related daughter products, and heavy metals require that extra mitigation measures are taken during and after uranium mining activities.

In order for Mining Act Reclamation staff to increase their knowledge of mining and environmental issues related to uranium, staff are taking advantage of a number of training opportunities. Program staff have been involved in joint radiation hazard training with other agencies, such as the New Mexico Environment Department (NMED) and the Navajo Nation Abandoned Mine Land Program. Topics covered in these trainings included work plans for sampling uranium mine sites and radiation health physics. In addition, courses and seminars, offered by the Interstate Technology and Regulatory Council in Radiation Clean-up, are available to staff. Staff will be trained in the area of health physics, through education and proper monitoring techniques, to ensure their safety while on mine sites.

Because of heightened concerns from the public, including Native American tribes and nations, MARP is developing a process to better inform the general public and Native Americans about current and upcoming uranium mine projects, both for new permits and existing mine reclamation projects.

In addition to the permitting of exploration sites, there are six other uranium properties that fall under the heading of "Regular Existing Operations," and are regulated by the New Mexico Mining Act. These properties include: Mount Taylor, Old Stope Leach, Section 27, St. Anthony, JJ No. 1, and Northeast Church Rock mines. The Old Stope Leach Mine is under permit and under

reclamation. The St. Anthony, Section 27, Northeast Church Rock, and JJ No. 1 mines are all existing uranium properties that will not be mined again, but must obtain approved closeout plans and be reclaimed. After discussions with the Navajo Environmental Protection Agency and the United States Environmental Protection Agency (USEPA), the responsibility for remediation oversight of the Northeast Church Rock site has fallen to the USEPA.

## **9. EXCELLENCE IN RECLAMATION AWARDS**

The Mining and Minerals Division's Excellence in Reclamation Award program was started in 1996 to recognize excellence in mine reclamation at coal, hard rock, and aggregate operations, and excellence in abandoned mine land safeguarding and reclamation. The Energy, Minerals and Natural Resources Department presents its yearly Excellence in Reclamation Awards at the annual New Mexico Mining Association Conference.

Criteria for selecting award winners include:

- 1) Advancing reclamation science through studies or innovative reclamation techniques which mitigate mining-related impacts to surface water, ground water, wildlife habitat, plants or soils;
- 2) Voluntary reclamation of a mine by an operator that is not required by any regulatory program;
- 3) Increasing public awareness of mining issues through open public processes (e.g. stakeholder meetings, voluntary public meetings, publications etc.).

A history of award winners and presentations can be found on the MMD website at <http://www.emnrd.state.nm.us/MMD/OFD/ExcellenceReclamationAwards.htm>.

### **2006 Excellence in Reclamation Award**

The 2006 Excellence in Reclamation Award winner was GCC Rio Grande, Inc., for successful concurrent reclamation at the Tijeras Mine and Mill. The operation, located near the intersection of I-40 and NM 14, in Tijeras, Bernalillo County, produces portland cement used for concrete. The Tijeras Mine and Mill, owned by Grupos Cementos de Chihuahua, Mexico, employs approximately 100 people.

GCC Rio Grande began reclamation work while concurrently mining – a goal sought by the New Mexico Mining Act. In addition to the 5 acres of test plots, an additional 6 acres of ancillary areas surrounding the test plots underwent reclamation. Approved post-mining land-uses are wildlife habitat and recreational use for the mine; commercial/industrial for the plant.

Additionally, GCC Rio Grande proposed a more comprehensive test plot study than was required under their permit from the Mining Act Reclamation Program. Five acres of test plots were designed to study various rates of seeding and organic amendments. In addition, tree and shrub seedlings of various native deciduous and conifer species were planted in selected test plots to study their survival rates at the mine site.

A waste rock that the Tijeras Mine has excavated and stockpiled over years of mine operation was used as a plant growth medium because of the lack of appreciable soils at the mine. Approximately 3,200 tons of horse manure was used in the test plots and other reclamation to amend the poor quality soils. The Tijeras Mine sought out and arranged for the transfer of manure from the Santa Fe Downs racetrack, owned by the Pojoaque Pueblo, in an agreement that was a gain for both parties. The combination of the waste rock soil medium and organic

amendments are being studied in the test plots to see if they produce a good growth medium for use in future reclamation at the Tijeras Mine.



**Table 6. Mining Act Reclamation Program Staff**

<b>Employee Name, Title</b>	<b>Telephone</b>	<b>E-Mail Address</b>
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David Ohori, Senior Reclamation Specialist Soil Scientist/Plant Scientist - Supervisor	(505) 476-3438	david.ohori@state.nm.us
Terence Foreback, Senior Environmental Engineer Professional Mine Engineer	(505) 476-3432	terence.foreback@state.nm.us
Steve Lucero, Senior Reclamation Specialist Geologist/Hydrologist	(505) 476-3434	stephen.lucero@state.nm.us
Mickey Jojola, Reclamation Specialist Soil Scientist	(505) 476-3439	mickey.jolola@state.nm.us
James Hollen, Reclamation Specialist Geologist/Hydrologist	(505) 476-3436	james.hollen@state.nm.us



**Appendix No.1 Mining Operations in New Mexico**

**Table 7. Regular Existing Mines as of December 2006**

<b>Permit No.</b>	<b>Mine Name</b>	<b>Operator</b>	<b>Permit Status</b>	<b>Mine Status</b>	<b>Commodity</b>
BE001RE	Tijeras Mine and Mill	GCC Rio Grande, Inc.	Approved	Active	Limestone
CA005RE	Challenge Mine and Mill	Challenge Mining Company	Enforcement	Inactive	Gold, Silver
CI002RE	Mount Taylor Mine	Rio Grande Resources Corporation	Approved	Inactive	Uranium
CI005RE	Tinaja Pit Mine	C & E Concrete, Inc	Approved	Active	Limestone
CI007RE	JJ No. 1 / L Bar Mine	Rio Tinto Energy Corporation	Pending	Inactive	Uranium
GR001RE	Pinos Altos Mine	Phelps Dodge Mining Company	Approved	Inactive	Metals, Silica Flux
GR002RE	Continental Mine and Mill	Cobre Mining Company	Approved	Inactive	Copper, Zinc, Magnetite
GR006RE	Chino Limestone Mine	Chino Mines Company	Approved	Inactive	Limestone
GR007RE	Little Rock Mine	Phelps Dodge Mining Company	Approved	Inactive	Cu
GR008RE	Jersey Lily, Snowflake and Virtue Mines	Phelps Dodge Mining Company	Approved	Inactive	Silica Flux
GR009RE	Chino Mine and Mill	Chino Mines Company	Approved	Active	Copper, Gold, Silver, Molybdenum
GR010RE	Tyrone Mine/Mill	Phelps Dodge Mining Company	Approved	Active	Copper
GR020RE	Georgetown Mine	Sierra Corporation	Approved	Inactive	Copper, Gold, Silver
GR028RE	Center Mine	Douglas E. Hanson	Approved	Inactive	Silica, Silver
HI001RE	Lordsburg Mine and Mill	Lordsburg Mining Company	Approved	Inactive	Silica Flux
HI002RE	Brockman Mine	Phelps Dodge Mining Company	Approved	Inactive	Silica
LU001RE	Deming Jigging Mill	American Minerals, Inc.	Approved	Inactive	Magnesium
LU008RE	Cyprus Deming Tailings Impoundment	Phelps Dodge Mining Company	Approved	Inactive	Copper, Zinc
LU009RE	Asarco Deming Mill	Asarco, Inc.	Approved	Inactive	Copper, Zinc
MK001RE	Section 35 Mine	Rio Algom LLC	Approved	Inactive	Uranium
MK004RE	Northeast Church Rock Mine	United Nuclear Corporation	Pending	Inactive	Uranium
MK005RE	Section 27 Mine	United Nuclear Corporation	Pending	Inactive	Uranium
MK006RE	St. Anthony Mine	United Nuclear Corporation	Pending	Inactive	Uranium
MK009RE	Old Stope Leach Mine	Rio Algom, LLC	Approved	Inactive	Uranium
RA004RE	Rocky Mountain Mine	CR Minerals, LLC	Approved	Active	Pumice
RA005RE	Velarde Mill	Oglebay Norton Specialty Minerals	Approved	Inactive	Mica
SA001RE	Las Conchas/El Cajete Mine	Copar Pumice Company	Approved	Active	Pumice
SA002RE	Clod Buster Mine and Mill	Agronics, Inc.	Enforcement	Inactive	Humate
SA003RE	Nacimiento Mine	Leaching Technology, Inc.	Denied	Inactive	Copper
SF002RE	Cunningham Hill Mine	LAC Minerals Company	Approved	Inactive	Gold
SI006RE	Zeolite Mine and Mill	St. Cloud Mining Company	Approved	Active	Zeolites

<b>Permit No.</b>	<b>Mine Name</b>	<b>Operator</b>	<b>Permit Status</b>	<b>Mine Status</b>	<b>Commodity</b>
SO001RE	Socorro Perlite Mine and Mill	Dicaperl Corporation	Approved	Active	Perlite
TA001RE	Questa Mine and Mill	Molycorp, Inc.	Approved	Active	Molybdenum
TA002RE	El Grande Mine and Mill	Dicaperl Corporation	Approved	Active	Perlite
TA003RE	U. S. Hill Mine	Pueblo of Picuris	Approved	Inactive	Mice
TA005RE	No Agua Mine and Mill	Harborlite Corporation	Approved	Active	Perlite

**Total Regular Existing Mine Permit Applications = 36**

**Total Regular Existing Mine Permits Approved = 29**

**Table 8. Minimal Impact Existing Mines as of December 2006**

<b>Permit No.</b>	<b>Mine Name</b>	<b>Operator</b>	<b>Permit Status</b>	<b>Mine Status</b>	<b>Commodity</b>
CA003ME	Hiawatha And Little Jim Mine	Volcanic Stone Company	Approved	Inactive	Tin
GR011ME	Summit Mine	Royal Group Technologies Ltd.	Approved	Inactive	Silica Flux, Gold
GR016ME	Malone Mine	Louis Osmer	Approved	Inactive	Silica
GR018ME	Banks Mine (Lost New Summit No. 1 Mine)	Micrex Development Corporation	Approved	Inactive	Silica, Silver
GR019ME	Boston Hill Mine	Town Of Silver City	Approved	Released	Manganese
GR025ME	Mathis Lime Quarry Mine	Mathis Rocks	Approved	Inactive	Limestone
GR029ME	Mount Royal Mine and Mill	Micrex Development Corporation	Approved	Inactive	Gold
GR030ME	Chemical Lime Mine & Mill	Chemical Lime Company	Approved	Inactive	Silica Flux
HI008ME	Volcano Mine	Dane Mining & Exploration	Approved	Inactive	Gold, Silver, Silica
LI001ME	Warner Gulch Placer Mine	American Eagle Mining Company	Approved	Active	Gold
LI005ME	Capitan Iron Mine	El Capitan Ltd.	Approved	Active	Iron
MK003ME	Star Lake Mine – Menefee	Menefee Mining Corporation	Approved	Active	Humate
MK007ME	Star Lake Mine - Mesa Verde	Mesa Verde Resources	Approved	Active	Humate
MK008ME	Pueblo Alto Mine	Mesa Verde Resources	Approved	Inactive	Humate
RA001ME	Northstar Mine	Northstar Family Trust	Pending	Inactive	Gold
RA003ME	Cullum Claims Mine	Pueblo of Santa Clara	Approved	Inactive	Pumice
RA006ME	General Pumice Mine	City Of Espanola	Pending	Inactive	Pumice
SA005ME	Menefee Mill	Menefee Mining Corporation	Approved	Active	Humate
SA010ME	Mesa Verde Resources Mill	Mesa Verde Resources	Terminated	Released	Humate
SF001ME	San Pedro Mine and Mill	St. Cloud Mining Company	Approved	Inactive	Copper, Gold
SF003ME	Silver Silica Mine	Oro Blanco Mining Company, LLC	Approved	Active	Silica
SF006ME	CR Minerals Mill	CR Minerals Company	Approved	Active	Pumice
SI001ME	St. Cloud US Treasury Mine	St. Cloud Mining Company	Approved	Inactive	Silica, Gold, Silver
SI007ME	Midnight Mine	Larry L. Harris	Approved	Inactive	Gold, Copper
VA001ME	Lucero Quarry Mine	New Mexico Travertine, Inc.	Approved	Active	Travertine

**Total Number of Minimal Impact Existing Mine Permit Submittals = 25**

**Total Number of Minimal Impact Existing Mines Approved = 22**

**Total Number of Minimal Impact Existing Mines Released = 2**

**Table 9. Minimal Impact New Mines as of December 2006**

<b>Permit Number</b>	<b>Mine Name</b>	<b>Operator</b>	<b>Permit Status</b>	<b>Mine Status</b>	<b>Commodity</b>
CA002MN	Deadwood / Last Chance Mine	Micrex Development Corporation	Approved	Inactive	Silica, Silver
CI003MN	ANP No. 2 Mine	Acid Neutralizing Products, Inc.	Approved	Active	Travertine
CI004MN	Haskani Mine	Acid Neutralizing Products, Inc.	Approved	Active	Travertine
CI006MN	Ray Claims No. 4 and No. 6 Mines	Stoneworld, Inc.	Approved	Active	Travertine
DA002MN	Shamrock Environmental Mine	Espanola Transit Mix Company	Approved	Inactive	Precious Metals
DA003MN	Coyote No. 1 Mine	Greg Richards	Approved	Active	Zeolites
DA004MN	Coyote No. 1 Mine	Greg Richards	Approved	Active	Zeolites
GR012MN	KB Mine	Southwest Silica Flux Co., Inc.	Approved	Reclaimed	Silica
GR022MN	Farmers Back Breaker Mine	Larry Moore	Enforcement	Inactive	Gold
GR023MN	Copper Conglomerate Mine	Copper Creek Exploration	Enforcement	Inactive	Copper
GR031MN	Toro Mine	Toro Mining and Minerals, Inc.	Terminated	Inactive	Perlite
GR056MN	McCauley Perlite Mine	St. Cloud Mining Company	Approved	Inactive	Perlite
HI004MN	KM Mine	Southwest Silica Flux Company, Inc.	Approved	Inactive	Silica
LU011MN	Herb Bailey No. 1 Mine	Boot Heel Minerals	Enforcement	Active	Turquoise
LU012MN	Herb Bailey No. 2 Mine	Boot Heel Minerals	Enforcement	Active	Turquoise
MK010MN	U-Mate Mine	U-Mate International, Inc.	Approved	Active	Humate
MK011MN	Morningstar Mine	Morningstar Corporation	Approved	Active	Humate
OT002MN	B.O.W. Mine	B.O.W. Corporation	Approved	Inactive	Garnet
OT003MN	Joel Nanez Mine	Joel Nanez	Dropped	Inactive	Gypsum
SA004MN	Copar South Pit Mine	Copar Pumice Company	Approved	Active	Pumice
SA006MN	Copper City Mine	Crystal Mining Corp.	Enforcement	Inactive	Humate
SA009MN	Eagle Mesa Mine	Rammsco, Inc.	Approved	Active	Humate
SA011MN	San Luis Mine	Horizon Ag-Products	Approved	Active	Humate
SI005MN	Burbank Canyon Mine	The Beenah Group, Inc.	Approved	Inactive	Precious Metals
SJ001MN	Morningstar Mill	Morningstar Corporation	Pending	Active	Humate
SO002MN	Sais Quarry Mine	New Mexico Travertine	Approved	Inactive	Schist
SO004MN	Alamosa Mine	Tognoni & Lufkin	Dropped	Inactive	Beryllium
SO005MN	San Lorenzo Claim Mine	Tim Apodoca	Approved	Inactive	Gold

**Total Number of Minimal Impact New Mine Permit Applications = 28**

**Total Number of Minimal Impact New Mine Permits Approved = 19**

**Total Number of Minimal Impact New Mine Permits Terminated = 1**

**Table 10. Exploration Projects as of December 2006**

<b>Permit Number</b>	<b>Exploration Name</b>	<b>Operator</b>	<b>Commodity</b>	<b>Status</b>
BE001EM	HRI Inc. Exploration	HRI, Inc.	Uranium	Approved
CA004EM	Gutapa Exploration Project	Sunburst Mining Company	Gold, Platinum	Approved
CA006EM	Deep Creek	Derek Kuester	Gold, Silver, Copper	Approved
CA007EM	Faith Mining Association	Faith Mining Association	Gold, Rare Earths	Approved
CA008EM	Southwest Research No. 1	Southwest Research and Dev. Co.	Silver, Gold, Platinum	Approved
CA009EM	Apache Camp Exploration	Faith Mining Association	Gold	Approved
CA011EM	Sunburst/Deadwood Exploration	Micrex Development	Silver, Gold, Copper	Pending
CI001EM	ANP No. 1	Acid Neutralization Product, Inc.	Travertine	Approved
CI002EM	La Jara Mesa Confirmation Drill	Anaconda Resources, Inc.	Uranium	Approved
CI004EM	Twenty Two	Jim Herrison	Travertine	Approved
CI008EM	La Jara Mesa Exploration	Pat Gochnour	Uranium	Approved
CI009EM	La Jara Mesa Extension Exploration	Urex Energy Corp	Uranium	Pending
DA001EM	Alivio Exploration Project	Louis Gonzales	Gold	Approved
DA002EM	Golden Link Exploration	Don Snodgrass	Gold, Silver	Approved
DA001ER	Shamrock Environmental	Shamrock Environmental	Heavy Metals	Dropped
GR001EM	Deadman Canyon	Copper Creek Exploration Ltd.	Copper	Approved
GR002EM	Pinos Altos Project	Pinos Altos Gold Exp. Inc.	Gold	Approved
GR004EM	Tyrone West Drilling Program	Copper Creek Exploration Ltd.	Copper	Approved
GR005EM	Gold Rush	Harvey Lee Harvey	Gold, Silver	Approved
GR006EM	Navarro Mineral	D. Gilbert Navarro	Gold	Approved
GR007EM	Lone Mountain Project	Lone Mtn Mining Ltd.	Copper	Approved
GR009EM	Good Cheer Group	Don Yelsma		Approved
GR010EM	Beaumont Silver Mine	Lou Osmer	Silver	Approved
GR010EM R1	Beaumont Exploration	LOU OSMER	Silver	Approved
GR011EM	Shamrock Gold Mine	Lou Osmer	Gold	Approved
GR012EM	Astrologer Gold Mine	Lou Osmer	Gold	Approved
GR013EM	Chocolate Peak	Harald Hoegberg	Gold, Silver, Copper, Zinc	Approved
GR014EM	Copper Mountain South	Phelps Dodge Tyrone, Inc.	Copper	Approved
GR015EM	Golden Eagle Exploration	John Bernal	Gold	Approved
GR017EM	Toro Mining Exploration	Charles Grey	Perlite	Approved
GR018EM	Emma Exploration drilling	Phelps Dodge Tyrone, Inc.	Copper	Approved
GR019EM	SW Area drilling project	Phelps Dodge Tyrone, Inc.	Copper	Approved



<b>Permit Number</b>	<b>Exploration Name</b>	<b>Operator</b>	<b>Commodity</b>	<b>Status</b>
GR020EM	Nellie Bly Exploration	Phelps Dodge Tyrone, Inc.	Copper	Approved
GR021EM	Hachita	Ken Krahulec	Precious Metals	Approved
GR022EM	Tyrone Peak	Phelps Dodge Tyrone, Inc.	Copper	Approved
GR023EM	Brockman Exploration Project	Kennecott Exploration Company	Gold	Approved
GR024EM	Don Snodgrass	Don Snodgrass	Silver, Gold	Approved
GR024EM R1	Don Snodgrass	Don Snodgrass	Gold	Approved
GR025EM	Lawrence Pierce	Lawrence Pierce	Gold	Approved
GR026EM	Gutapa Project	Sunburst Mining Corp.	Gold, Platinum	Approved
GR027EM	Neglected Mine	William Hinkle, Jr	Ag, Au, Cu	Approved
GR027EM R1	Neglected Mine Renewal 1	William Hinkle, Jr	Gold	Approved
GR028EM	Thornwell Exploration	Thornwell Rogers	Silver, Copper, Zinc	Approved
HI001EM	San Simon Project	Cyprus Metals Company		Approved
HI002EM	Beck Mine Project	Beck Silver Mines	Gold, Silver	Approved
HI003EM	Sterling	Noranda Exploration, Inc.	Copper	Approved
HI004EM	Willow Draw	Mark Osterberg	Copper	Approved
HI006EM	Hachita Peak	Teck Resources	Gold	Approved
HI007EM	Apache Hills	Madison Resources (NM), Inc.	Metals	Approved
LI001EM	Vera Cruz	Placer Dome, Inc.	Gold, Copper	Approved
LI004EM	M&R Project	Richard Mendoza	Rare Earth	Approved
LI006EM	Stage 4 Exploration	EI Capitan Ltd	Metals	Pending
LI007EM	AN6	EI Capitan Ltd	Metals	Pending
LU001EM	Victorio Project	Lone Mtn Mining Ltd.	Gold	Approved
LU002EM	Homer's Little Diggins	Homer Nute	Agate	Approved
LU002 R1	Homer's Little Diggins	Homer Nute	Agate	Approved
LU003EM	Mahoney Exploration Project	James M. Telford	Zinc	Approved
LU010EM	Cameo Exploraition	Philip Chambless	Etc	Approved
LU013EM	Kling Exploration	C.A. Kling	Agate	Pending
LU014EM	Galway Exploration	Galway Resources US, Inc.	Silver, Gold, Etc	Approved
MK009EM	Gamerco	U Mate International	Humate	Approved
MK010EM	West Ambrosia	HRI, Inc.	Uranium	Approved
MK011EM	Andrea Corporation	Hal Collins	Humate	Approved
MK012EM	Treeline Exploraion Project	Western Energy Development Corp.	Uranium	Approved
MK013EM	Ambrosia Lake Exploration	Neutron Energy	Uranium	Pending
MK014EM	Roca Honda Exploration	Strathmore	Uranium	Pending

<b>Permit Number</b>	<b>Exploration Name</b>	<b>Operator</b>	<b>Commodity</b>	<b>Status</b>
OT002EM	Oro Grande Project	Lone Mtn Mining Ltd.	Gold, Copper	Approved
OT003EM	Metalline Mining Exploration	Metalline Mining Co.	Garnet	Approved
OT004EM	B.O.W Exploration	B.O.W. Corporation		Pending
RA002EM	Mid Way Exploration	Al Puckett	Gold	Approved
SA001EM	Los Griegos Project	Copar Pumice Company	Pumice	Approved
SA003ER	Georgia Claims	Centex American Gypsum	Gypsum	Approved
SA004EM	Vallecitos Drilling	Copar Pumice Company	Pumice	Approved
SF001EM	Cerro de Oro #2, 11	Joan Oller	Gold	Approved
SF002EM	Jack's Place	Jack Nelson	Gold	Approved
SF003EM	Three B'S #1&2	Brian Kew	Gold	Approved
SF004EM	Rafelita	Joseph Gonzales	Gold	Approved
SF006EM	Jones Hill	Champion Resources	Silver, Gold	Approved
SF007EM	NMGMA	Texas Gold - NMGMA	Gold	Approved
SF008EM	Jones Hill Project	Davenport Minerals Corp	Silver, Gold, Copper, Zinc	Approved
SF005ER	Carache Canyon 4	LAC Minerals (USA) Inc.	Gold	Approved
SI001EM	Hillsboro Project	Placer Dome, Inc.		Approved
SI002EM	Hackberry Draw	Grubstake Mining & Exploration, Inc.	Gold	Approved
SI007EM	Drolte Mine	Drolte Mining	Metals	Approved
SI008EM	Colossal Project	Ed Rudder	Gold	Approved
SI009EM	Gold Run #1 Placer	John D. Whiteside	Gold	Approved
SI010EM	Deep Pockets #1 and #2	Arthur Hartman	Gold	Dropped
SI011EM	Drotle Claims	Mary Alice Drolte	Gold	Approved
SI012EM	B. Franklin Claims	Dan Dodl	Gold, Silver, Platinum	Approved
SI013EM	Gold Silver Exploration	Dan Medley	Gold	Approved
SI014EM	Dictator Mine	Megastar Ventures	Gold, Silver, Copper, Lead, Zinc	Approved
SI015EM	Sonny's Tailings	Ken Schmatjen	Gold	Approved
SI016EM	Iron Mountain Exploration	Great Western Exploration		Approved
SI016EM R1	Iron Mountain Exploration	Great Western Exploration	Beryllium	Approved
SI017EM	East of Winston Exploration	Great Western Exploration		Approved
SI018EM	Franklin Mine	Sonny Riggs	Gold	Pending
SI019EM	Bat Cave Canyon	Sonny Riggs		Pending
SI020EM	Socorro 2006A Exploration	Melvin R. Mathis	Gold, Precious Metals	Approved
SO001EM	San Juan Exploration Shaft	Al Meyers	Gold, Silver	Approved
SO002EM	Northside Drilling Project	Kalahari Exploration LLC	Copper	Approved

<b>Permit Number</b>	<b>Exploration Name</b>	<b>Operator</b>	<b>Commodity</b>	<b>Status</b>
SO004EM	Alamosa Exploration	Bob Lufkin and David Tognoni	Beryllium	Enforcement
SO005EM	Andrea Ann	Cliff Strieber	Etc	Approved
SO005EM R1	Andrea Ann Exploration Renewal	Cliff Strieber	Etc	Approved
SO006EM	Sullivan Ranch Exploration	Great Western Exploration	Rare Earth	Denied
SO007EM	Burma Exploration	Great Western Exploration	Beryllium	Approved
SO008EM	Socorro 2005A Exploration	Socorro Minerals Corp.	Gold, Precious Metals	Approved
SO010EM	Sullivan Ranch (Revised)	Great Western Exploration	Beryllium	Denied
SO011EM	Bingham Exploration	Ramon Demark	Etc	Approved
TA002EM	Champion Project	St. Mary Mineral Inc.	Copper	Approved
TA002ME	Champion	Summo USA Corp.	Copper	Approved
TO001EM	3 in 1 Project	George Ramirez	Copper	Approved
TO002EM	3 in 1 Project	CIRO RAMIREZ	Copper	Approved

**Total Number of Exploration Projects Submitted = 120**

**Total Number of Exploration Projects Approved = 100**

**Table 11. General Permits as of December 2006**

<b>Permit Number</b>	<b>Name</b>	<b>Date Submitted</b>	<b>Date Issued</b>	<b>Location</b>
BE001WET	Robert Lipinski	8/11/2004	8/17/2004	Rio Grande
CI001DRY	International Stone Company	7/9/2002	7/15/2002	Cerro Verde
GR020DRY	ENER G. CORP., INC.	7/31/1997	8/7/1997	Near Chocolate Peak
GR022DRY	Cathy Heslet	3/23/1998	3/30/1998	Golden Duck
GR023WET	Weston Wolff	2/4/1998	3/11/1998	Black sand claim 1-6/Pa Cha ma
GR025DRY	John Bernal	5/4/1998	5/12/1998	Golden Eagle #1 Claim
GR029DRY	Paul Plunkett	4/21/1998	4/28/1998	Gold Gulch (T20S, R16W, S26
GR030DRY	John Huntress	4/6/1999	5/1/1999	Amer. Turquoise (T27S,R16W,S35)
GR031DRY	Samuel Munoz	7/15/1999	7/21/1999	Twin Sisters Creek
GR032DRY	Dana Bates	7/5/2000	7/8/2000	near Pinos Altos
GR033WET	Weston Wolff	7/10/2000	7/24/2000	Gold Gulch
GR034WET	Weston Wolff	8/15/2001	8/21/2001	Gold Gulch
GR035WET	Weston Wolff	9/3/2002	9/4/2002	Gold Gulch
GR050WET	Robert Batchler	2/23/1998	2/26/1998	Black Sand 1 Claim
GR051DRY	Mark Welch	1/24/2003	2/17/2003	Steeple Rock Area
GR052WET	Weston Wolff	8/4/2003	8/4/2003	Gold Gulch
GR053DRY	John Scully	12/5/2003	12/17/2003	Grant County
GR054WET	Weston Wolff	8/2/2004	8/3/2004	Gold Gulch
GR055WET	Weston Wolff	9/15/2005	9/21/2005	Gold Gulch
GR056WET	Weston Wolff	8/15/2006	8/30/2006	Gold Gulch
LI027DRY	Paul Plunkett	4/21/1998	4/28/1998	Ancho Gulch (T5S, R12E, S4)
LI028DRY	Amos Black III	6/7/1999	7/7/1998	Against the Wind in Ancho
OT031DRY	Harvey Snowden	8/26/1997	8/29/1997	Near Orogrande
OT032DRY	Harvey Snowden	8/31/1998	9/11/1998	Best Laugh Claim/Orogrande
OT033DRY	Amos Black III	6/7/1999	7/7/1998	Old Dry Placer No. 1 in Orogra
OT034DRY	Mike Pittman	5/16/2006	8/30/2006	General DrySection 4&5 T16S R10E
RA001WET	Rhonda Shinpoch	4/28/1997	5/8/1997	Placer Creek
RA002WET	Ed Shinpoch	5/18/1998	6/2/1998	Placer Creek
RA003WET	Charles Alston	3/16/1998	3/30/1998	Placer Creek
RA004WET	Terry Nelson	4/21/1997	4/24/1997	Placer Creek
RA005WET	Donavon Maddox	5/19/1997	5/22/1997	Placer Creek
RA006WET	James White	5/7/1997	5/10/1997	Negrito Creek

Permit Number	Name	Date Submitted	Date Issued	Location
RA007WET	Thomas Sena	5/19/1997	5/29/1997	Placer Creek, Apache Creek
RA008WET	Buell Williams	5/19/1997	5/29/1997	Tres Piedras Area
RA009WET	Arnold Hale	5/19/1997	5/29/1997	Placer Creek
RA011WET	Steven Hill	5/19/1997	5/29/1997	Placer Creek, Percha Creek
RA012WET	Lynn Files	5/19/1997	5/29/1997	Placer Creek
RA014WET	Philip Fattori	5/27/1997	5/27/1997	Placer Creek
RA015WET	Stuart Scantlin	6/3/1997	6/18/1997	Placer Creek
RA016WET	Jim Edwards	6/17/1997	6/18/1997	Placer Creek
RA017WET	Harold Phelps	6/25/1997	6/30/1997	Placer Creek
RA018aDRY	Robert Threlkeld	3/28/1998	3/30/1998	Old Dry Placer #1/Against the
RA018WET	Robert Threlkeld	3/23/1998	3/30/1998	Placer Creek
RA019WET	Harold Conley	5/12/1998	6/11/1998	Placer Creek and near Tusa Mt.
RA024WET	Bruce Gibson	2/11/1998	2/24/1998	Placer Creek
RA026WET	David Eckles	4/30/1998	5/11/1998	Placer Creek
RA030WET	Richard Freeze	6/26/1998	7/6/1998	Placer Creek
RA031Wet	Willy Skigen	6/26/1998	7/6/1998	Placer Creek
RA032WET	Mike Cogburn	4/23/1999	5/15/1999	Placer Creek
RA033DRY	Richard Vondrak	5/11/1999	6/21/1999	Barela Canyon
RA034WET	Harold Phelps	5/24/1999	5/24/1999	Placer Creek
RA035WET	Amos Black III	6/7/1999	7/7/1998	Placer Creek No. 1-3
RA036WET	Mark Barber	6/25/1999	7/1/1999	Placer Creek
RA037WET	Robert Shober	6/22/1999	7/1/1999	Placer Creek
RA038WET	Larry Melvin	8/9/1999	8/21/1999	Placer Creek
RA039WET	Ed Shinpoch	3/20/2000	3/23/2000	Placer Creek
RA040WET	Timothy Haller	3/20/2000	3/23/2000	Placer Creek
RA041WET	Richard Freeze	5/3/2000	5/17/2000	Placer Creek
RA042WET	Mike Cogburn	5/11/2000	5/17/2000	Placer Creek
RA043WET	Jeff Shute	5/26/2000	5/26/2000	Placer Creek
RA044WET	Harold Conley	5/30/2000	5/30/2000	Placer Creek
RA045WET	Robert Shober	6/19/2000	7/1/2000	Placer Creek
RA046DRY	Richard Vondrak	6/20/2000	6/21/2000	Barela Canyon
RA047DRY	Robert Gibbens	7/2/2001	7/9/2001	Petaca Tantulum
RA047WET	John Fegel	6/30/2000	6/30/2000	north Placer Creek
RA048WET	Richard Bird	6/29/2000	7/6/2000	Placer Creek

<b>Permit Number</b>	<b>Name</b>	<b>Date Submitted</b>	<b>Date Issued</b>	<b>Location</b>
RA049WET	Don Classen	7/20/2000	7/21/2000	Placer Creek
RA050WET	Steve Klahn	4/12/2001	4/16/2001	Placer Creek
RA051WET	Amos Black III	5/11/2001	5/14/2001	Placer Creek
RA052WET	David Krenek	5/15/2001	5/16/2001	Placer Creek
RA053WET	Richard Bird	5/21/2001	5/21/2001	Placer Creek
RA054WET	Richard Freeze	5/21/2001	5/21/2001	Placer Creek
RA055WET	Ed Shinpoch	5/25/2001	5/29/2001	Placer Creek
RA056WET	Ron Burnside	5/31/2001	5/31/2001	Placer Creek
RA057WET	Richard Torres	6/5/2001	6/5/2001	Placer, Goose, Pioneer Creeks
RA058WET	Harold Conley	6/15/2001	6/15/2001	Placer Creek
RA061WET	Robert Shober	7/19/2001	7/20/2001	Placer Creek
RA062WET	John Garcia	8/1/2001	8/1/2001	Placer Creek
RA063WET	Norman Van Camp	2/27/2002	2/27/2002	Placer Creek
RA064WET	Amos Black III	4/12/2002	4/16/2002	Placer Creek
RA065WET	Ed Shinpoch	4/12/2002	4/16/2002	Placer Creek, Vallecitos Creek
RA066WET	Robert Shober	7/18/2002	7/18/2002	Placer Creek No. 1-3
RA067WET	Karl Murphy	4/25/2003	Dropped	Placer Creek No. 1-3
RA068WET	Cecil Morrow	5/12/2003	5/12/2003	Placer Creek No. 1-3
RA069WET	Jeff Jaramillo	5/28/2003	5/28/2004	Placer Creek No. 1-3
RA070WET	Ronald Stanley	6/1/2003	6/13/2003	Placer Creek No. 1-3
RA071WET	Gary Fannin	6/12/2003	6/13/2003	Placer Creek No. 1-3
RA072WET	Russel Palmer	6/6/2003	6/13/2003	Placer Creek No. 1-3
RA073WET	Joe Walker	7/30/2003	8/5/2003	Placer Creek, Apache Creek
RA074WET	Harold Phelps	8/12/2003	8/12/2003	Placer Creek
RA075WET	Matthew Hindi	8/14/2003	8/14/2003	Placer Creek
RA076WET	Jerry Emerson	11/7/2003	2/15/2003	Placer Creek No. 1-3
RA77WET	Eugene Leggett	1/8/2004	1/20/2004	Placer Creek, Apache Creek
RA078WET	Ronald Stanley	2/2/2004	2/25/2004	Placer Creek
RA079WET	Ed Shinpoch	4/2/2004	4/12/2004	Placer Creek
RA080WET	Joe Whitley	4/12/2004	4/20/2004	Placer Creek No. 1-3
RA081WET	Rex Anderson	4/21/2004	4/21/2004	Placer Creek No. 1-3
RA082WET	Robert Lipinski	5/18/2004	5/25/2004	
RA083WET	Richard Freeze	5/28/2004	6/3/2004	Placer Creek No. 1-3
RA084WET	David Alexander	5/28/2004	6/3/2004	Placer Creek No. 1-3

Permit Number	Name	Date Submitted	Date Issued	Location
RA085WET	Alan Boissy	6/18/2004	6/21/2004	Placer Creek
RA086WET	Eugene Leggett	1/5/2005	1/7/2005	Sections 1,12 T28N R6E
RA087WET	Ronald Stanley	2/23/2005	3/10/2005	Placer Creek Claims 1,2, and 3
RA088WET	Frank Mullally	4/11/2005	6/1/2005	Placer Creek Claims 1, 2, &3, Sections 1 and 12
RA089WET	Jeff Jaramillo	5/9/2005	5/25/2005	This site is located at Placer Creek
RA090WET	Matthew Brandt	5/17/2005	6/8/2005	Placer Creek # 1-3
RA091WET	Robert Maras	5/18/2005	6/10/2005	Placer Creek, Claims 1-3
RA092WET	Ed Shinpoch	5/20/2005	7/5/2005	Placer Creek Claims 1&2
RA093WET	Richard Freeze	6/9/2005	6/29/2005	Placer Creek Claims 1-3
RA094WET	David Nielson	6/27/2005	6/29/2005	Placer Creek
RA095WET	Rex Anderson	8/18/2005	8/1/2005	Placer Creek Claims 1-3
RA096WET	Tijerina Luis	8/3/2005	8/9/2005	Placer Creek
RA097WET	Steven Wright	3/20/2006	5/3/2006	Placer Creek
RA098WET	Ed Shinpoch	4/10/2006	5/23/2006	Placer Creek
RA099WET	Carl Kirby	4/17/2006	5/3/2006	Placer Creek
RA100WET	Robert Hall	5/3/2006	5/24/2006	Placer Creek
RA101WET	David Nielson	5/24/2006	6/5/2006	Placer Creek
RA102WET	Frank Mullally	5/30/2006	6/8/2006	Placer Creek
RA103WET	Earnest Clark	6/6/2006	6/27/2006	Placer Creek
SA021DRY	David Barnhill	3/13/1998	3/30/1998	Insanity #1 Claim
SA022DRY	Craig Muma	11/23/2004	12/2/2004	S 19, T17N, R2W
SF001DRY	Michael Bailey	1/24/2003	2/17/2003	Cerrillos Area
SF002DRY	Tim Haller	2/10/2004	2/11/2004	Golden, NM
SF003DRY	Paul Plunkett	6/12/2004	6/16/2004	San Pedro
SF004DRY	Philip Chambless	6/17/2005	6/27/2005	Turquoise
SF005DRY	Paul Plunkett	7/12/2005	8/1/2005	
SF009DRY	Paul Plunkett	6/28/2006	7/19/2006	Section 28, T12N, R7E
SI028DRY	Paul Plunkett	4/21/1998	4/28/1998	Animas Gulch (T15S, R7W, S25)
SI029DRY	Amos Black III	6/7/1999	7/7/1998	Sunrise Claim No. 1-4 in Kings
SI029WET	John Williams, Jr.	3/3/2003	5/12/2003	Elephant Butte
SM050WET	Robert Staffel	7/2/2001	7/2/2001	Willow Creek
SO001DRY	Paul Plunkett	1/26/1999	3/1/1999	Crestone Lode Mine - Magdalena
SO002DRY	Ramon De Mark	1/24/2000	2/9/2000	south of Bingham, NM

Permit Number	Name	Date Submitted	Date Issued	Location
SO003DRY	Michael Sanders	2/7/2000	2/9/2000	south of Bingham, NM
SO004DRY	Tom Nelson	3/9/2000	3/10/2000	south of Bingham, NM
SO005DRY	Thomas Massis	5/15/2000	5/18/2000	south of Bingham, NM
SO006DRY	John Scully	12/3/2003	12/17/2003	Socorro County
SO007DRY	Jo Drake	2/27/2004	3/5/2004	Socorro County
SO008DRY	Jo Drake	2/17/2005	3/10/2005	Section 29, T6S, R8E
SO009DRY	Michael Tune	4/8/2005	4/21/2005	Located south of Magdalena in Cibola National Forrest
SO011DRY	Jo Drake	1/25/2006	2/1/2006	S 20, 29 T6S R8E
TA010DRY	Vaughn Sowards	5/20/1997	5/22/1997	Cerrito Dormilon, Petaca Peak
TA013DRY	S. Glassmire	2/25/1999	3/1/1999	Latir Peak
TA014WET	Robert Lipinski	6/29/2004	7/6/2004	
TA015WET	Jeff Jaramillo	8/16/2004	8/18/2004	Rio Hondo
GR056WET	Weston Wolff	8/15/2006		Gold Gulch
<b>Total Number of General Permits Submitted = 146</b>				
<b>Total Number of General Permits Approved = 143</b>				



**Appendix No. 2 Financial Assurance for New Mexico Operations for 2005**

**Table 12. Financial Assurance as of December 2006**

Permit Number	Permit Name	Operator	Commodity	Disturbed Acres	Instrument	Amount	Joint Agencies	Approval Date
BE001RE	Tijeras Mine and Mill	GCC Rio Grande, Inc. Tijeras, NM	Limestone	504	Third party guarantee	\$2,812,500.00		12/30/2004
					Letter of Credit	\$867,500.00		12/30/2004
					Surety Bond	\$70,000.00	USFS	6/30/1998
					<b>Subtotal:</b>	<b>\$3,750,000.00</b>		
CA003ME	Hiawatha And Little Jim Mine	Volcanic Stone Co. Albuquerque, NM	Tin	7.5	Certificate of Deposit	\$736.00	USFS	5/11/1998
					<b>Subtotal:</b>	<b>\$736.00</b>		
CI002RE	Mt. Taylor Mine	Rio Grande Resources Corp. Grants, NM	Uranium	66	Surety Bond	\$725,056.00		12/18/1998
					<b>Subtotal:</b>	<b>\$725,056.00</b>		
CI004MN	Haskani Mine	Acid Neutralizing Products, Inc. Albuquerque, NM	Travertine	10	Certificate of Deposit	\$32,473.00		6/10/2002
					<b>Subtotal:</b>	<b>\$32,473.00</b>		
CI005RE	Tinaja Pit Mine	C & E Concrete, Inc. Milan, NM	Limestone	40	Letter of Credit	\$161,514.00		12/15/2004
					<b>Subtotal:</b>	<b>\$161,514.00</b>		
CI006MN	Ray Claims No. 4 and No. 6 Mine	Stoneworld Inc. Scottsdale, AZ	Travertine	10	Certificate of Deposit	\$20,405.00		10/14/2004
					<b>Subtotal:</b>	<b>\$20,405.00</b>		
GR001RE	Pinos Altos Mine	Chino Mines Co. Hurley, NM	Copper, Gold, Silver, Zinc	12	Letter of Credit	\$343,600.00		10/13/2006
					<b>Subtotal:</b>	<b>\$343,600.00</b>		
GR002RE	Continental Mine and Mill	Cobre Mining Co. Hurley, NM	Copper, Gold, Molybdenum, Silver	928	Third Party Guarantee	\$19,694,525.00	NMED	2/1/2005
					Collateral Bond	\$8,397,586.00	NMED	8/22/1997
					Trust	\$3,000,000.00	NMED	8/22/1997
					<b>Subtotal:</b>	<b>\$32,879,165.00</b>		
GR006RE	Chino Limestone Mine	Chino Mines Co. Hurley, NM	Limestone	50	Letter of Credit	\$18,400.00		10/13/2006
					<b>Subtotal:</b>	<b>\$18,400.00</b>		
GR007RE	Little Rock Mine	Phelps Dodge Tyrone, Inc. Tyrone, NM	Copper	85	Letter of Credit	\$1,355,400.00	NMED	10/13/2006
					<b>Subtotal:</b>	<b>\$1,355,400.00</b>		
GR008RE	Jersey Lily, Snowflake and Virtue Mines	Phelps Dodge Tyrone, Inc. Tyrone, NM	Silica Flux	22	Letter of Credit	\$46,600.00		10/13/2006
					<b>Subtotal:</b>	<b>\$46,600.00</b>		
GR009RE	Chino Mine and Mill	Chino Mines Co. Hurley, NM	Copper	9,416	Third Party Guarantee	\$113,465,947.00	NMED	12/18/2003
					Trust	\$64,042,304.00	NMED	12/18/2003
					<b>Subtotal:</b>	<b>\$177,508,251.00</b>		
GR010RE	Tyrone Mine and Mill	Phelps Dodge Tyrone, Inc. Tyrone, NM	Copper	7,440	Letter of Credit	\$57,975,900.00		10/13/2006
					Letter of Credit	\$6,256,604.00	NMED	4/12/2004
					Letter of Credit	\$170,874.00	BLM	5/6/2005
					Third Party Guarantee	\$189,542,509.00	NMED	4/12/2004
					Trust	\$17,000,000.00	NMED	4/12/2004
					<b>Subtotal:</b>	<b>\$270,945,887.00</b>		

Permit Number	Permit Name	Operator	Commodity	Disturbed Acres	Instrument	Amount	Joint Agencies	Approval Date
GR012MN	KB Mine	Southwest Silica Flux Co., Inc. Hanover, NM	Silica flux	5.6	Certificate of Deposit	\$24,182.00	USFS	12/22/1998
					<b>Subtotal:</b>	<b>\$24,182.00</b>		
GR020RE	Georgetown Mine	Sierra Corp. Fort Worth, TX	Silver	3	Certificate of Deposit	\$21,500.00	NMED	1/7/1999
					<b>Subtotal:</b>	<b>\$21,500.00</b>		
GR022MN	Farmers Backbreaker Mine	Jack Sills Glenwood Spring, CO	Gold	10	Certificate of Deposit	\$15,000.00	USFS	8/2/1999
					<b>Subtotal:</b>	<b>\$15,000.00</b>		
GR025ME	Mathis Limestone Quarry Mine	Mathis Rocks Idyllwild, CA	Limestone	16.6	Certificate of Deposit	\$3,000.00		1/21/1999
					<b>Subtotal:</b>	<b>\$3,000.00</b>		
GR028RE	Center Mine	Royal Minerals, Inc. Duncan, AZ	Gold, Silver, Silica flux	6	Surety Bond	\$12,500.00		12/6/1999
					<b>Subtotal:</b>	<b>\$12,500.00</b>		
GR030ME	Chemical Lime Mine & Mill	Chemical Lime Co. Fort Worth, TX	Silica flux	19	Surety Bond	\$40,243.00	USFS	1/20/2000
					<b>Subtotal:</b>	<b>\$40,243.00</b>		
HI001RE	Lordsburg Mine and Mill	Lordsburg Mining Co. T or C, NM	Silica flux, Aggregate	15	Certificate of Deposit	\$17,603.00		6/30/2003
					<b>Subtotal:</b>	<b>\$17,603.00</b>		
HI002RE	Brockman Mine	Phelps Dodge Hidalgo, Inc. Hurley, NM	Silica flux	40	Letter of Credit	\$276,900.00		1/19/1999
					<b>Subtotal:</b>	<b>\$276,900.00</b>		
HI004MN	KM Mine	Southwest Silica Flux Co., Inc. Hanover, NM	Silica flux	4	Certificate of Deposit	\$8,124.00		12/16/1997
					<b>Subtotal:</b>	<b>\$8,124.00</b>		
HI008ME	Volcano Mine	Dane Mining & Exploration, Ltd. Tucson, AZ	Other	9	Collateral Bond	\$28,652.00		7/15/1998
					<b>Subtotal:</b>	<b>\$28,652.00</b>		
LI001ME	Warner Gulch Placer Mine	American Eagle Mining Co. Carlsbad, NM	Gold	10	Letter of Credit	\$10,000.00	USFS	1/8/1998
					<b>Subtotal:</b>	<b>\$10,000.00</b>		
LI003ER	Bonito Gold//Silver Project	David Dunn Vancouver, BC, Canada	Gold	0.2	Cash	\$200.00		10/11/1996
					<b>Subtotal:</b>	<b>\$200.00</b>		
LI005ME	Capitan Iron Mine	El Capitan Ltd. Capitan, NM	Iron	6	Certificate of Deposit	\$15,000.00	USFS	6/30/1999
					<b>Subtotal:</b>	<b>\$15,000.00</b>		
LU001RE	Deming Jigging Mill	American Minerals, Inc. El Paso, TX	Manganese	16	Surety Bond	\$100,000.00		12/10/1997
					<b>Subtotal:</b>	<b>\$100,000.00</b>		
LU008RE	Cyprus Deming Tailings Impoundment	Chino Mines Co. Hurley, NM	Copper, Gold, Silver, Zinc	13	Letter of Credit	\$132,588.00	NMED	10/13/2006
					<b>Subtotal:</b>	<b>\$132,588.00</b>		
LU009RE	Asarco Deming Mill	Asarco, Inc. Phoenix, AZ	Copper, Zinc	56	Surety Bond	\$850,000.00		12/22/1998
					<b>Subtotal:</b>	<b>\$850,000.00</b>		
MK003ME	Star Lake Mine – Menefee	Menefee Mining Corp. Dallas, TX	Humate	9.4	Surety Bond	\$13,000.00		5/27/1998
					<b>Subtotal:</b>	<b>\$13,000.00</b>		
MK007ME	Star Lake Mine - Mesa Verde	Mesa Verde Resources Placitas, NM	Humate	9.9	Surety Bond	\$13,277.00		12/30/1999
					<b>Subtotal:</b>	<b>\$13,277.00</b>		

Permit Number	Permit Name	Operator	Commodity	Disturbed Acres	Instrument	Amount	Joint Agencies	Approval Date
MK008ME	Pueblo Alto Mine	Mesa Verde Resources Placitas, NM, NM	Humate	9.9	Surety Bond	\$21,051.00		12/30/1999
					<b>Subtotal:</b>	<b>\$21,051.00</b>		
MK009RE	Old Stope Leach Mine	Rio Algom Mining LLC Grants, NM	Uranium	230	Letter of Credit	\$577,616.00		12/5/2004
					<b>Subtotal:</b>	<b>\$577,616.00</b>		
MK010MN	U-Mate Mine	U-Mate International, Inc. Scottsdale, AZ	Humate	5.5	Certificate of Deposit	\$8,844.00		1/8/1998
					<b>Subtotal:</b>	<b>\$8,844.00</b>		
OT002MN	B.O.W. Mine	B.O.W. Corp. El Paso, TX	Garnet	10	Letter of Credit	\$15,932.00		4/29/2004
					<b>Subtotal:</b>	<b>\$15,932.00</b>		
RA003ME	Cullum Claims Mine	Pueblo of Santa Clara Espanola, NM	Pumice	20	Letter of Credit	\$161,500.00		3/28/2005
					<b>Subtotal:</b>	<b>\$161,500.00</b>		
RA004RE	Rocky Mountain Mine	CR Minerals Company, LLC Santa Fe, NM	Pumice	60	Surety Bond	\$289,810.00		9/29/1999
					<b>Subtotal:</b>	<b>\$289,810.00</b>		
RA005RE	Velarde Mill	Oglebay Norton Specialty Minerals Velarde, NM	Mica	35	Surety Bond	\$287,821.00	NMED	12/1/1999
					<b>Subtotal:</b>	<b>\$287,821.00</b>		
SA001RE	Las Conchas / El Cajete Mine	Copar Pumice Co. Espanola, NM	Pumice	40	Letter of Credit	\$78,747.00	USFS	11/4/1997
					Letter of Credit	\$12,103.00	USFS	12/12/1997
					<b>Subtotal:</b>	<b>\$90,850.00</b>		
SA002MN	Said Quarry Mine	New Mexico Travertine Belen, NM	Schist	3.7	Certificate of Deposit	\$2661.00		
					<b>Subtotal:</b>	<b>\$2661.00</b>		
SA003ER	Georgia Claims	Centex American Gypsum Albuquerque, NM	Gypsum	0.2	Surety Bond	\$5,000.00	BLM	4/21/1997
					<b>Subtotal:</b>	<b>\$5,000.00</b>		
SA004MN	Copar South Pit Mine	Copar Pumice Co. Espanola, NM	Pumice	6	Letter of Credit	\$33,516.00	USFS	4/16/1997
					<b>Subtotal:</b>	<b>\$33,516.00</b>		
SA005ME	Menefee Plant	Menefee Mining Corporation Dallas, TX	Humate	9.6	Certificate of Deposit	\$16,000.00		11/1/2000
					<b>Subtotal:</b>	<b>\$16,000.00</b>		
SA006MN	Copper City Mine	Crystal Mining Corp. Albuquerque, NM	Humate	3.4	Cash	\$800.00		12/20/1995
					<b>Subtotal:</b>	<b>\$800.00</b>		
SA009MN	Eagle Mesa Mine	Rammsco, Inc. Katy, TX	Humate	3.5	Letter of Credit	\$7,270.00		8/11/1997
					<b>Subtotal:</b>	<b>\$7,270.00</b>		
SA010ME	Mesa Verde Resources Mill	Mesa Verde Resources Placitas, NM, NM	Humate	5.3	Surety Bond	\$18,856.00		12/30/1999
					<b>Subtotal:</b>	<b>\$18,856.00</b>		
SA011MN	San Luis Mine	Horizon Ag-Products Modesto, CA	Humate	10	Letter of Credit	\$25,000.00		10/14/2004
					<b>Subtotal:</b>	<b>\$25,000.00</b>		
SF002RE	Cunningham Hill Mine	LAC Minerals (USA) LLC Cerrillos, NM	Gold	307	Trust	\$378,766.00		12/13/2002
					<b>Subtotal:</b>	<b>\$378,766.00</b>		
SF006ME	CR Minerals Mill	CR Minerals Company, LLC Santa Fe, NM	Pumice	5	Surety Bond	\$127,439.00		2/17/2000
					<b>Subtotal:</b>	<b>\$127,439.00</b>		

Permit Number	Permit Name	Operator	Commodity	Disturbed Acres	Instrument	Amount	Joint Agencies	Approval Date
SI001ME	St. Cloud U.S. Treasury Mine	St. Cloud Mining Co. T or C, NM	Copper, Gold, Silver, Garnet	6	Certificate of Deposit	\$1,857.00	NMED	5/11/2003
					<b>Subtotal:</b>	<b>\$1,857.00</b>		
SI005MN	Burbank Canyon Mine	Agent for The Beenah Group - Titan Mining Englewood, CO	Precious metal concentrates	9	Certificate of Deposit	\$8,288.00		5/21/2003
				9.9	Certificate of Deposit	\$30,000.00		2/11/1999
					<b>Subtotal:</b>	<b>\$38,288.00</b>		
SI006RE	Zeolite Mine and Mill	St. Cloud Mining Co. T or C, NM	Zeolite	51	Collateral Bond	\$130,029.00	NMED	2/23/2004
					<b>Subtotal:</b>	<b>\$130,029.00</b>		
SO001RE	Socorro Mine and Mill	Dicaperl Minerals Corp. Socorro, NM	Perlite	162	Letter of Credit	\$688,166.00		12/10/1998
					<b>Subtotal:</b>	<b>\$688,166.00</b>		
TA001RE	Questa Mine and Mill	Molycorp Inc. Questa Div. Questa, NM	Molybdenum	1200	Letter of Credit	\$23,027,393.00	NMED	4/4/2006
				800	Third Party Guarantee	\$117,752,599.00		6/2/2002
					Letter of Credit	\$16,223,474.00		6/2/2002
					<b>Subtotal:</b>	<b>\$157,003,466.00</b>		
TA002RE	El Grande Mine and Mill	Dicaperl Minerals Corp. Antonito, CO	Perlite	204	Letter of Credit	\$711,497.00		12/2/1998
					<b>Subtotal:</b>	<b>\$711,497.00</b>		
TA003RE	U. S. Hill Mine	Pueblo of Picuris Penasco, NM	Mica	65	Letter of Credit	\$613,849.00	USFS	4/27/2005
					<b>Subtotal:</b>	<b>\$613,849.00</b>		
TA005RE	No Agua Mine and Mill	Harborlite Corp. Antonito, CO	Perlite	275	Surety Bond	\$833,121.00		7/26/1999
					<b>Subtotal:</b>	<b>\$833,121.00</b>		
VA001ME	Lucero Quarry Mine	New Mexico Travertine Belen, NM	Travertine, Dimension stone	9.9	Certificate of Deposit	\$24,515.00		12/22/1998
					<b>Subtotal:</b>	<b>\$24,515.00</b>		

**TOTALS:**

**Disturbed Acres: 22,391**

**Financial Assurance: \$651,074,229.00**



**Appendix No. 3 Map of Mines Regulated by the Mining Act Reclamation Program**

Figure 3. Preview of Online MARP Mines Map

***Mining Act Reclamation Program's Regulated Mines, 2005.***

