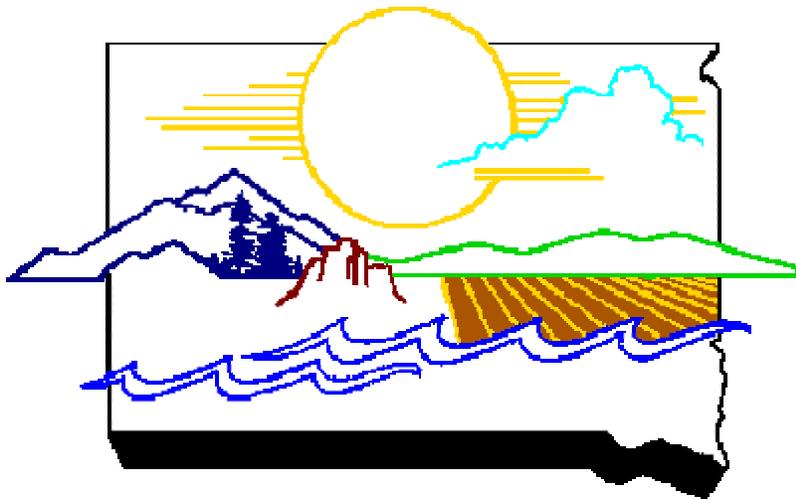


**SUMMARY OF
THE MINING INDUSTRY IN SOUTH DAKOTA**

2001



Protecting South Dakota's Tomorrow ... Today

**PREPARED BY
THE MINERALS AND MINING PROGRAM
SD DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
MAY 2002**

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INTRODUCTION

The Department of Environment and Natural Resources is required by state law to prepare a "Summary of the Large Scale Gold Surface Mining Industry in the Black Hills" and a "Publication of Surface Mined Disturbed Land and Reclamation Acreages under Chapter 45-6B." These two reports have been combined into a single report entitled "Summary of the Mining Industry in South Dakota." This report covers mining activities from January 1 to December 31, 2001. The information in this report is based on annual reports and other information submitted by mining operations permitted under Chapter 45-6B.

2001 Summary

Homestake Mining Company, which has been a part of South Dakota history for 125 years, mined its last ton of gold ore on December 14, 2001. The mine, which was once the largest gold mine in the Western Hemisphere, is now beginning closure activities that will include dismantling buildings and reclaiming areas associated with its 125-year mining history. In anticipation of mine closure, Homestake completed several reclamation activities prior to and during 2001.

Reclamation activities at the Gilt Edge Mine continued throughout 2001. The mine was placed on the Superfund National Priorities List on December 1, 2000. Reclamation efforts have concentrated on getting the Ruby Gulch waste rock dump, the major source of acid mine drainage at the site, ready for capping. About 1.4 million cubic yards of material was moved in order to reduce slopes to a 3.5:1 slope. Earthmoving activities were completed in February 2002. A geomembrane liner and rock drainage layer will be placed over the dump in summer 2002.

Despite low gold prices, gold production increased in 2001 for the first time in five years. Large scale gold mines produced 289,326 ounces of gold in 2001, an increase of 24,314 ounces from 2000. Production from the Homestake mine increased from 170,906 ounces in 2000 to 185,307 ounces in 2001. All of the production came from the underground portion of the mine, as Homestake completed mining in the Open Cut in September 1998. Wharf Resources (USA), Inc. was the only other company to report gold production in 2001. Wharf reported gold production of 104,019 ounces in 2001, an increase from the 93,814 ounces reported in 2000.

\s/
Steven M. Pirner
Secretary

**SUMMARY OF THE LARGE SCALE GOLD MINING INDUSTRY IN THE
BLACK HILLS**

2001



Photo 1.1 – Homestake Mine in Lead (1876-2001).

MAJOR EVENTS IN 2001

Homestake Mining Company Closes Historic Mine

At 7:46 p.m. on December 14, 2001, the end of an era came as Homestake Mining Company mined the last ton of gold ore at its flagship Homestake Mine in Lead. The last mining occurred at the 1400 level, which is almost directly under the Open Cut where the original Homestake gold strike occurred. This ended 125 years of mining at Homestake, which was once the largest gold mine in the Western Hemisphere. It produced nearly 40 million ounces of gold during its long history. Homestake announced on September 11, 2000, that the mine would close at the end of 2001 due to low gold prices, high production costs, and lower than expected ore grades.

Even before the last ore was mined, Homestake started a number of closure projects in 2001. These included demolishing portions of the Deadwood slime plant, reclaiming the old Lead city dump, removing the Highway 14A tunnel, removing the Open Cut conveyor and crusher, and numerous abandoned mine projects. Additional reclamation activities will continue in 2002, which include decommissioning of the underground mine and reclamation of the mill.

Barrick Gold Corp. and Homestake Announce Merger

In addition to the mine closure, Homestake was involved in another major event in 2001. Homestake announced a merger with Barrick Gold Corp., making the new company the third largest gold mining company in the world. The consolidation was completed on December 14, 2001, the same day the last ton of gold ore was mined at the Homestake Mine. Homestake Mining Company was also removed from the New York Stock Exchange on this date. It was originally listed on January 25, 1879. The new parent company will operate under the Barrick Gold name. The mine itself will retain the name Homestake Mining Company, a wholly owned subsidiary of Barrick Gold Corp. Barrick Gold also owns the Richmond Hill Mine (LAC Minerals (USA), LLC) in South Dakota, which has been undergoing reclamation for the past eight years.

Gilt Edge Mine Reclamation Continues

Reclamation activities at the Gilt Edge Mine, which began in the fall of 2000, continued throughout 2001. The Environmental Protection Agency (EPA) took over management of the mine from the state of South Dakota on July 31, 2000, and the mine was placed on the Superfund National Priority List on December 1, 2000. Through an interagency agreement, EPA retained the US Bureau of Reclamation (BOR) to manage the site and develop closure plans.

Reclamation efforts concentrated on getting the Ruby Gulch waste rock dump, the main source of acid mine drainage at the site, ready for capping. About 1.4 million cubic yards of material was moved on the dump in order to reduce slopes to a 3.5:1 slope. The BOR also constructed ditches

to divert water around the dump. Earthmoving was completed in February 2002. Plans are to place a geomembrane (plastic) liner and rock drainage layer over the regraded waste dump in summer 2002.



Photo 1.2 - Ruby Depository May 2001



Photo 1.3 - Ruby Depository November 2001.

Water treatment continued at the mine site in 2001. Over 235 million gallons of acid water have been treated and discharged since the state took over the mine in July 1999. Acid water stored in the pits has been reduced from 150 million gallons in July 1999 to 90 million gallons at the end of the year.

Acid Mine Drainage Mitigation Update at Richmond Hill Mine

The Richmond Hill Mine continues to show improvement since major reclamation activities were completed in the mid-1990s. The performance of the pit impoundment, backfilled with acid-generating rock and covered with a low permeability capping system, continued to surpass expectations again in 2001. Monitoring data shows that only minimum amounts of oxygen and water are being detected in the impoundment. This indicates the cap is effective in limiting oxygen and water infiltration and is preventing acid generation. No signs of settling or slumping were found during routine surveys of the pit impoundment by the department or LAC Minerals (USA), LLC contractors. A dense, self-sustaining vegetative cover has become established on the pit impoundment and most of the waste dump area.

The capped leach pads also continue to perform well. Monitoring data shows that the capping systems are effective in reducing water infiltration into the spent ore. Water draining from the leach pads is being treated in an innovative passive treatment system constructed in 2000. Passive treatment systems allow naturally occurring biological processes to treat mine drainage in a controlled environment. Results from 2001 show that the passive treatment system is effective in reducing nitrates, sulfates, and selenium. LAC plans to adjust the system in 2002 to improve removal rates.

Ground and surface water quality around the mine site is closely monitored. Ground water impacted by acid rock drainage prior to mine reclamation is steadily improving. Monitoring wells generally show decreasing trends in sulfate and metal concentrations and increasing pH. Biological assessments of Squaw Creek below the mine show that the stream remains healthy and supports a viable cold water fishery. Due to dry weather, LAC did not treat water in 2001. LAC plans to resume seasonal water treatment in 2002.

Wharf Resources (USA), Inc. Announces Closure of Golden Reward Mine

Wharf Resources (USA), Inc. announced that it would close the Golden Reward Mine and begin final reclamation in 2002. The mine is owned by Wharf Resources and has been in temporary cessation for the past five years. Golden Reward Mining Company, LP has already reclaimed 184 of the 397 acres of land affected during mining operations from 1988 to 1996. Final reclamation will consist of backfilling pits in the western part of the mine, reconstructing the upper Fantail Creek drainage, and completing topsoil placement and revegetation. Most of the backfilling and regrading work will be completed by October 2002. About 2.5 million cubic yards will be moved during reclamation. The property is being reclaimed to a beneficial use of wildlife habitat.

New Permits

There were no new mine permits issued to large scale gold and silver mining operations in 2001.

Permit Amendments

There were no permit amendments issued to large scale gold and silver mining operations in 2001.

Notices of Violation

The department issued one Notice of Violation to large scale gold and silver mines in 2001. On August 7, 2001, a Notice of Violation was issued to Wharf for violating pond leakage reporting and repair requirements of its mine permit and selenium effluent limits of its surface water discharge permit. In settlement of the Notice of Violation, Wharf paid a \$31,382 penalty and agreed to improve compliance with pond leakage requirements and install a system capable of treating selenium to surface water discharge permit standards.

Update on Abandoned Mine Reclamation

The department worked with the US Forest Service and EPA to reclaim the historic Minnesota Ridge Mine in the summer of 2001. The ten-acre mine site is located about 14 miles south of Lead



Photo 1.4 - Passive Treatment Ponds at Minnesota Ridge.

in Lawrence County. In the fall of 2000, buildings at the site were demolished in preparation for reclamation activities. Reclamation activities in 2001 included removing acid-generating rock from a drainage, placing the rock in a capped facility on a nearby ridge, and reconstructing the drainage. The Forest Service plans to conduct other activities at the site in 2002 to complete reclamation.

The department is also involved in a partnership with the Western Governors Association and the US Forest Service to obtain additional funding to reclaim the King of the West and Yellow Bird Mines through the Abandoned Mined Land Initiative. The initiative is a partnership created in 1997 between the Western Governors Association and the National Mining Association to address obstacles to abandoned mine reclamation. These mines are located about three miles southwest of Rochford in Pennington County. Hazards at the sites include acid-generating tailings, open shafts, collapsed buildings, and other structures. The US Forest Service is currently developing a plan to reclaim the site with reclamation scheduled to start later in 2002 or 2003.

Technical Revisions Approved by the Department in 2001

February 14	Wharf Resources – Modify the application rate of the nurse crop seed mix.
March 8	Wharf Resources – Discontinue the annual ground and surface water report for the Reliance Waste Rubble site since it is covered in the site wide annual water quality report.
April 11	Golden Reward – Line Fantail french drain sedimentation ponds with semi-permeable filter paper.
June 26	Wharf Resources - Expand the Trojan Pit to the northeast into the American Eagle area.
June 27	Homestake Mining – Discontinue maintenance of ambient air PM 10 monitors at the Open Cut.

June 27	Homestake Mining – Use topsoil from the Sawpit Waste Rock Facility for reclamation projects on Homestake property.
June 28	LAC Minerals – Modify reclamation success monitoring plan and game bird, raptor, and breeding bird surveys.
August 7	Homestake Mining – Remove US Highway 14A tunnel and reclaim Sawpit haul road.
August 27	Golden Reward – Remove PMP Pond from leakage rate action plan requirements when process solutions are not present.
August 31	Homestake Mining – Modify the slope on five benches of the East Waste Rock Facility to change the drainage on the benches.
September 19	Wharf Resources – Install a reverse osmosis system for treatment of selenium.
September 26	Wharf Resources – Install a road crossing system similar to a railroad crossing system for the intersection of State Highway 473 and the Trojan Haul Road.
September 27	LAC Minerals – Modify the aquatic monitoring plan at the mine.
September 28	LAC Minerals – Modify the schedule for mine pit backfill monitoring plan and leach pad monitoring plan.
December 19	Wharf Resources – Modify the annual bird monitoring program.
December 20	LAC Minerals – Reduce the frequency of water quality monitoring at the mine.
December 20	Golden Reward – Remove Detox Pond from leakage rate action plan requirements when process solutions are not present.
December 27	Golden Reward – Modify the final backfill plan for the Golden Reward Mine and plans and specifications for the upper Fantail Creek drainage.

Special or Unique Land Determinations

The department did not receive any requests for the determination of Special, Exceptional, Critical, or Unique Lands for potential large scale gold mines in 2001.

Board of Minerals and Environment Releases Reclaimed Dakota Placers Inc. Mine

In August 2001, the Board of Minerals and Environment approved release of liability for 16.1 acres reclaimed at the Red Placer Mine northeast of Deadwood. This mine was operated by Dakota Placers Inc. and others since the 1970s under Large Scale Mine Permit No. 208. In 1995, Brightwater Inc, a subsidiary of Dunbar Inc., took over ownership of the Red Placer claim. In 1996 and 1997, Brightwater and Homestake jointly reclaimed the mine as part of a stipulation between Dakota Placers, Homestake, Brightwater Inc., and the state of South Dakota. Reclamation exceeded that required under the original mine permit. This is the second large scale placer gold mine to be released. The first permit released was held by Leo Erck, whose bond was released in June 1991.



Photo 1.5 - Reclaimed Dakota Placers Mine.

ACREAGE AND PRODUCTION TABLES

The following tables were developed by compiling information from operator annual reports, supplemental information submitted to the department by the large scale gold mines, inspection reports, and other available information.

Various charts and graphs comparing total affected and reclaimed acreage can be found in Appendix 1. The bar chart on page A-2 compares affected acreage versus reclaimed acreage for each company. The graph on page A-3 shows the trend of total affected acres and total reclaimed acres for the large scale gold industry from 1990 to 2001. The pie chart on the same page shows total reclaimed acres versus total unreclaimed acres for the large scale gold mine industry in 2001.



Photo 1.6 – Reclaimed Pet Hill Mining Area at Golden Reward.

TABLE 1.1 – AFFECTED MINED LAND ACREAGE

Permit Number	Operator	Permitted Affected Acres	Acres Affected Year 2001	Total Acres Affected as of Dec. 31, 2001
439 & 462	Brohm Mining Corp.	564.00	0.00	263.00
208	Dakota Placers, Inc. ¹	0.00	0.00	0.00
450	Golden Reward Mining Co., L.P.	493.62	0.00	397.00
332 & 456	Homestake Mining Company	658.23	0.00	549.74
445	LAC Minerals (USA), LLC	439.10	0.00	320.70
416	Naneco Minerals, Inc. (formerly Minerva Explorations)	122.00	0.00	0.00
356, 434, 435, & 464	Wharf Resources (USA), Inc.	1001.02	116.58	856.28
TOTALS		3277.97	116.58	2386.72

¹Dakota Placer's liability and bond for the Red Placer Mine was released on August 15, 2001.

Definitions:

Permitted Affected Acres - As defined in SDCL 45-6B-3(1), permitted affected land involves all lands permitted to be affected by a mining operation. This includes land from which overburden is to be or has been removed; land upon which overburden, waste rock, mine spoil, or mill tailings are to be or have been deposited; land disturbed by the building of access roads, railroad loops, warehouses, storage areas, or other support facilities for the purpose of mining; and land affected by surface subsidence, unstable slopes, and other surface effects caused by underground mine workings.

Acres Affected Year 2001 - Previously unaffected acres disturbed from January 1 to December 31, 2001. This acreage is also included in "Total Acres Affected as of Dec. 31, 2001."

Total Acres Affected as of Dec. 31, 2001 - All land currently affected by the large scale gold and silver operations under permit as of December 31, 2001. This includes all lands described above in "Permitted Affected Acres."

TABLE 1.2 – SURFACE MINING DISTURBED LAND ACREAGE			
Permit Number	Operator	Surface Mining Disturbed Acres Year 2001	Total Surface Mining Disturbed Acres as of Dec. 31, 2001
439 & 462	Brohm Mining Corp.	0.00	202.10
208	Dakota Placers, Inc. ¹	0.00	0.00
450	Golden Reward Mining Co., L.P.	0.00	258.50
332 & 456	Homestake Mining Company	0.00	520.64
445	LAC Minerals (USA), LLC	0.00	192.90
416	Naneco Minerals, Inc. (formerly Minerva Explorations)	0.00	0.00
356, 434, 435, & 464	Wharf Resources (USA), Inc.	112.77	726.05
TOTALS		112.77	1900.19

¹Dakota Placer's liability and bond for the Red Placer Mine was released on August 15, 2001.

Definitions:

Surface Mining Disturbed Acres Year 2001 - Previously unaffected surface mining land disturbed from January 1 to December 31, 2001. This acreage is also included in "Total Surface Mining Disturbed Acres as of Dec. 31, 2001."

Total Surface Mining Disturbed Acres as of Dec. 31, 2001 - As defined in SDCL 45-6B-3(15), surface mining disturbed land is land from which overburden has been removed; land upon which overburden, waste rock, mine spoil, or mill tailings have been deposited; land mined which has no overburden; heap leach pads; and process ponds. Surface mining disturbed lands include overburden and waste rock dumps, spent ore dumps, tailings impoundments, heap leach pads, open pits, process ponds, haul roads in pit areas, or haul roads constructed largely of waste rock, spent ore, or overburden. Surface mining disturbed lands **do not** include access roads, haul roads constructed from normal cut and fill methods, railroad loops, utility corridors, buildings including process plants, land application areas, topsoil stockpiles, ore stockpiles, crusher areas, storage areas, sediment and erosion control structures, and land affected by surface subsidence, unstable slopes, and other surface effects caused by underground mine workings.

TABLE 1.3 – INTERIM RECLAIMED ACREAGE

Permit Number	Operator	Interim Reclaimed Acres Year 2001	Total Interim Reclaimed Acres as of Dec. 31, 2001
439 & 462	Brohm Mining Corp.	0.00	0.95
208	Dakota Placers, Inc. ¹	0.00	0.00
450	Golden Reward Mining Co., L.P.	0.00	7.23
332 & 456	Homestake Mining Company	0.00	0.00
445	LAC Minerals (USA), LLC	0.00	31.00
416	Naneco Minerals, Inc. (formerly Minerva Explorations)	0.00	0.00
356, 434, 435, & 464	Wharf Resources (USA), Inc.	0.31	24.97
TOTALS		0.31	64.15

¹Dakota Placer's liability and bond for the Red Placer Mine was released on August 15, 2001.

Definitions:

Interim Reclamation - As defined in ARSD 74:29:01:01(17), interim reclamation is reclamation performed during a mining operation or between mining phases to stabilize affected land by regrading and revegetating to control erosion, improve aesthetics, and minimize hazards. It can be construed to be temporary reclamation or soil stabilization for affected land that will be disturbed again.

Interim Reclaimed Acres Year 2001 - Acres under interim reclamation from January 1 to December 31, 2001. These acres are also included in "Total Interim Reclaimed Acres."

Total Interim Reclaimed Acres as of Dec. 31, 2001 - The total number of acres under interim reclamation as of December 31, 2001. Acres redisturbed or now considered as final reclamation are not included in these totals.

TABLE 1.4 – FINAL RECLAIMED ACREAGE FOR YEAR 2001

Permit Number	Operator	Final Reclaimed Acres Year 2001 that Meet Post-Mine Land Use¹	Final Reclaimed Acres Year 2001 that Do Not Meet Post-Mine Land Use
439 & 462	Brohm Mining Corp.	0.00	0.00
208	Dakota Placers, Inc.	16.10	0.00
450	Golden Reward Mining Co., L.P.	0.00	0.00
332 & 456	Homestake Mining Company	0.00	0.00
445	LAC Minerals (USA), LLC	15.70	0.00
416	Naneco Minerals, Inc. (formerly Minerva Explorations)	0.00	0.00
356, 434, 435, & 464	Wharf Resources (USA), Inc.	0.00	22.51
TOTALS		31.80	22.51

¹The final reclaimed acres during the past year that meet the post-mining land use in this table are industry figures. The department may not necessarily agree with the reported acreage and will need to confirm in the field that these acres do meet the post-mine land use criteria.

Definitions:

Final Reclaimed Acres Year 2001 That Meet Post-Mine Land Use – Affected land reclaimed prior to 2001, previously considered as not meeting the post-mine land use, that met the post-mine land use in 2001. These acres meet the requirements of the reclamation plan, SDCL 45-6B, and ARSD 74:29, and can be considered for bond release.

Final Reclaimed Acres Year 2001 That Do Not Meet Post-Mine Land Use - Affected land reclaimed between January 1 and December 31, 2001, that does not meet the requirements of the approved reclamation plan and the reclamation requirements of SDCL 45-6B and ARSD 74:29. Final grading, topsoil placement, erosion and drainage control, and seeding and planting have been conducted on these acres. However, these acres cannot be considered for bond release since they have not met the post-mining land use criteria.

**TABLE 1.5 – TOTAL FINAL RECLAIMED ACREAGE
As of December 31, 2001**

Permit Number	Operator	Final Reclaimed Acres that Meet Post-Mine Land Use¹	Final Reclaimed Acres that Do Not Meet Post-Mine Land Use
439 & 462	Brohm Mining Corp.	0.00	17.50
208	Dakota Placers, Inc.	16.10	0.00
450	Golden Reward Mining Co., L.P.	112.48	71.64
332 & 456	Homestake Mining Company	339.38	56.15
445	LAC Minerals (USA), LLC	196.00	21.80
416	Naneco Minerals, Inc. (formerly Minerva Explorations)	0.00	0.00
356, 434, 435, & 464	Wharf Resources (USA), Inc.	116.33	119.70
TOTALS		780.29	286.79

¹The final reclaimed acres that meet the post-mining land use in this table are industry figures. The department may not necessarily agree with the reported acreage and will need to confirm in the field that these acres do meet the post-mine land use criteria.

Definitions:

Final Reclaimed Acres That Meet Post-Mine Land Use - Affected land reclaimed as of December 31, 2001, that has a permanent, self-sustaining vegetative cover which meets the requirements of the approved reclamation plan and meets the reclamation requirements of SDCL 45-6B and ARSD 74:29. These acres can be considered for bond release.

Final Reclaimed Acres That Do Not Meet Post-Mine Land Use - Affected land reclaimed as of December 31, 2001, that does not meet the requirements of the approved reclamation plan and the reclamation requirements of SDCL 45-6B and ARSD 74:29. Final grading, topsoil placement, erosion and drainage control, and seeding and planting have been conducted on these acres. However, these acres cannot be considered for bond release since they have not met the post-mining land use criteria.

**TABLE 1.6 – SURFACE MINED RECLAMATION ACREAGE AND
RECLAMATION CREDITS
As of December 31, 2001**

Permit Number	Operator	Surface Mined Acres Reclaimed (SDCL 45-6B-86)	Total Affected Acres Reclaimed that Apply as Reclamation Credit per 1992 Mining Initiative (SDCL 45-6B-97)
439 & 462	Brohm Mining Corp.	3.00	11.20
208	Dakota Placers, Inc.	15.90	16.10
450	Golden Reward Mining Co., L.P.	168.41	184.12
332 & 456	Homestake Mining Company	387.56	395.53
445	LAC Minerals (USA), LLC	157.70	217.80
416	Naneco Minerals, Inc. (formerly Minerva Explorations)	0.00	0.00
356, 434, 435, & 464	Wharf Resources (USA), Inc.	226.30	236.03
TOTALS		958.87	1060.78

Definitions:

Surface Mined Acres Reclaimed - Total amount of surface mining disturbed acres under final reclamation as of December 31, 2001. The department is required to report these acres under SDCL 45-6B-86. Final grading, topsoil replacement, erosion and drainage control, and seeding and planting have been conducted on these acres.

Total Affected Acres Reclaimed That Apply as Reclamation Credit per 1992 Mining Initiative - Affected land under final reclamation as of December 31, 2001, that can be considered for reclaimed acreage credit as provided under SDCL 45-6B-97. Pursuant to SDCL 45-6B-97, reclamation is performed when the operator completes required grading, topsoil placement, erosion and drainage control, and seeding and planting.

**TABLE 1.7 - ORE AND WASTE ROCK PRODUCTION
January 1 to December 31, 2001**

Permit Number	Operator	Tons of Ore Mined Year 2001	Tons of Ore Processed Year 2001	Tons of Waste Rock and Overburden Mined Year 2001
439 & 462	Brohm Mining Corp.	0.00	0.00	0.00
208	Dakota Placers, Inc. ¹	0.00	0.00	0.00
450	Golden Reward Mining Co., L.P.	0.00	0.00	0.00
332 & 456	Homestake Mining Company (Open Cut)	0.00	0.00	0.00
445	LAC Minerals (USA), LLC	0.00	0.00	0.00
416	Naneco Minerals, Inc. (formerly Minerva Explorations)	0.00	0.00	0.00
356, 434, 435, & 462	Wharf Resources (USA), Inc.	4,345,104.00	4,216,968.00	7,223,574.00
SUBTOTAL		4,345,104.00	4,216,968.00	7,223,574.00
N.A.	Homestake Underground	775,808.00	783,194.00	68,462.00
TOTALS		5,120,912.00	5,000,162.00	7,292,036.00

¹Dakota Placer's liability and bond for the Red Placer Mine was released on August 15, 2001.

TABLE 1.8 – GOLD AND SILVER PRODUCTION
January 1 to December 31, 2001

Permit Number	Operator	Ounces of Gold Produced Year 2001	Ounces of Silver Produced Year 2001
439 & 462	Brohm Mining Corp.	0	0
208	Dakota Placers, Inc. ¹	0	0
450	Golden Reward Mining Co., L.P.	0	0
332 & 456	Homestake Mining Company ²	0	0
445	LAC Minerals (USA), LLC	0	0
416	Naneco Minerals, Inc. (formerly Minerva Explorations)	0	0
356, 434, 435, & 462	Wharf Resources (USA), Inc.	104,019	109,052
SUBTOTAL		104,019	109,052
N.A.	Homestake Underground	185,307	47,540
TOTALS		289,326	156,592
ESTIMATED VALUE³		\$78,413,133	\$684,307

¹Dakota Placer's liability and bond for the Red Placer Mine was released on August 15, 2001.

² All gold production was from Homestake's underground operation which is listed below

³ Based on 2001 average gold price of \$271.02 and 2001 average silver price of \$4.37

**TABLE 1.9 – WATER AND CYANIDE USE
January 1 to December 31, 2001**

Permit Number	Operator	Gallons Ground Water Withdrawn Year 2001	Gallons Surface Water Withdrawn Year 2001	Pounds of Cyanide Used Year 2001
439 & 462	Brohm Mining Corp.	0.00	0.00	0.00
208	Dakota Placers, Inc. ¹	0.00	0.00	0.00
450	Golden Reward Mining Co., L.P.	10,800,000.00 ³	3,100,690.00	0.00
332 & 456	Homestake Mining Company ²	0.00	0.00	0.00
445	LAC Minerals (USA), LLC	79,285.00	0.00	0.00
416	Naneco Minerals, Inc. (formerly Minerva Explorations)	0.00	0.00	0.00
356, 434, 435, & 462	Wharf Resources (USA), Inc.	37,285,900.00	49,932,000.00	705,994.00
TOTALS		48,165,185.00	53,032,690.00	705,994.00

¹Dakota Placer's liability and bond for the Red Placer Mine was released on August 15, 2001.

²Water and cyanide use by Homestake's underground mine is not included in this table.

³Golden Reward pumped its Bonanza well and discharged the water. None of the water was used at the mine.

TABLE 1.10 – BOND AMOUNTS FOR LARGE SCALE GOLD MINES				
Permit Number	Operator	Reclamation Bond	Postclosure Bond¹	Cyanide Spill Bond²
439 & 462	Brohm Mining Corp.	\$7,028,908 ³	\$0	\$0
208	Dakota Placers, Inc.	\$0 ⁴	\$0	\$0
450	Golden Reward Mining Co., L.P.	\$1,549,000 ⁵	\$132,000	\$0
332 & 456	Homestake Mining (Open Cut)	\$1,737,000 ⁵	\$0	\$0
445	LAC Minerals (USA), LLC	\$10,700,000 ⁵	\$0	\$0
416	Naneco Minerals, Inc. (formerly Minerva Explorations)	\$661,800 ⁶	\$0	\$0
356, 434, 435, & 464	Wharf Resources (USA), Inc.	\$12,106,050 ⁷	\$550,000 ⁷	\$383,000

¹ Postclosure bonds are not generally required to be submitted until the reclamation bond is released. However, by condition to Mine Permit No. 464, Wharf was required to submit a postclosure bond prior to closure. Golden Reward submitted a postclosure bond as per agreement for drainage control work in the West Liberty Pit.

² Financial assurance, or “cyanide spill bonds” are required under SDCL 45-6B-20.1. This financial assurance covers the cost of remediating accidental releases of cyanide or other leaching agents to the environment if a mine fails to do so. Wharf is the only mine where cyanide heap leaching is being done at this time. Wharf’s cyanide bond was updated in April 2001.

³ Because of the Dakota Mining Corp. bankruptcy, Brohm’s reclamation bond has been placed in a state account for use in reclamation of the Gilt Edge Mine. Interest from the bond is compounded and applied to the bond. The bond amount shown is current as of November 26, 2001.

⁴ Dakota Placers’ \$27,000 reclamation bond was released on August 15, 2001.

⁵ The department will recalculate reclamation bonds for Golden Reward, Homestake, and LAC in 2002.

⁶ Naneco Minerals is required to submit a reclamation bond in the amount of \$661,800 before the commencement of mining

⁷ The Board of Minerals and Environment approved the \$12 million reclamation bond on March 15, 2001, which was increased to \$12,106,050 in January 2002. Wharf also submitted a \$550,000 postclosure bond which is not part of the reclamation bond. The postclosure bond will be recalculated in 2002.

OPERATIONAL PLANS FOR 2002

Brohm Mining Corp.

EPA plans to construct a cap over the 65-acre Ruby Gulch Waste Rock Depository in 2002. A geomembrane (plastic liner) will be placed over the depository to cut off air and water infiltration, which will significantly reduce acid water generated from the waste dump. An 18-inch layer of rock from the Highway 385 construction project will be placed over the plastic liner and will serve as a drain layer. In 2003, the cap will be completed by placing a two-foot soil cover layer and a six-inch layer of topsoil over the drain rock prior to seeding.

EPA also plans to continue water treatment at the Gilt Edge Mine. The water treatment plant will be converted to lime for cost savings and to achieve water quality goals. The capacity of the plant will be increased from 200 gpm to 250 gpm to ensure that the pits are dewatered to meet pit backfill schedules.

Golden Reward Mining Company, L.P.

Golden Reward plans to begin final reclamation of the mine site around April 1, 2002. Final reclamation will consist of backfilling pits in the western part of the mine, reconstructing the upper Fantail drainage, and completing topsoil placement and revegetation. About 2.5 million cubic yards of mine rock will be moved during the project. Most of the earthwork and seeding should be completed by late October. The site is being reclaimed to wildlife habitat.

Homestake Mining Company (Barrick)

Homestake completed milling and processing of remaining ore from the closed underground mine on February 13, 2002. Final reclamation of the Lead mining operations will continue for several years. Additional reclamation activities in 2002 include decommissioning of the underground mine and reclamation of the mill.

LAC Minerals (USA), LLC (Richmond Hill Mine)

LAC Minerals will continue monitoring at the Richmond Hill Mine, and active water treatment will resume. Sludge from the pregnant and stormwater ponds will be removed and placed in a new sludge disposal pond. No additional reclamation activities are planned, although performance monitoring will continue.

Naneco Minerals, Inc.

Naneco Minerals has no activities planned for the Johnson Gulch area in 2002 under Large Scale Mine Permit No. 416.

Wharf Resources (USA), Inc.

Wharf Resources plans to complete mining in the Portland and Foley Pits. The major mining effort will be in the Trojan Pit. Barren rock from the Trojan Pit will be used to backfill the Foley and Portland Pits.

Reclamation activities in 2002 will consist of reclaiming the remaining 50 acres of disturbed land of the Trojan Waste Rock Facility.



Photo 1.7 – Reclaimed V-Notch at Richmond Hill Mine.

**SUMMARY OF SURFACE MINE DISTURBED AND RECLAMATION
ACRES UNDER SDCL 45-6B-86**

2001



Photo 2.1 – Pete Lien and Sons Inc. installing conveyor in preparation for new Blackhawk Quarry northwest of Rapid City.

SUMMARY OF ALL MINE PERMITS

In accordance with SDCL 45-6B-86, the Department of Environment and Natural Resources has compiled information regarding the number of acres of surface mining disturbed land and the amount of such land that has undergone reclamation as defined in Chapter 45-6B and in section 45-6B-83.1 for the period January 1 to December 31, 2001. This does not include acreages for mining operations regulated under SDCL Chapter 45-6 (493 active licensed mine operators, 1,937 active licensed sites), mineral exploration regulated under SDCL Chapter 45-6C (12 operators, 51 permits, excluding oil and gas), or uranium exploration regulated under SDCL Chapter 45-6D (no current operators or permits.) Sources for these statistics are permit applications, operating and reclamation plans, annual reports, department inspections, and operator information.

Board of Minerals and Environment Releases Additional Areas Reclaimed by American Colloid Company

In October 2001, the Board of Minerals and Environment approved release of liability for 64.1 acres reclaimed by American Colloid Company under Large Scale Mine Permit No. 461. This is the third block of American Colloid reclamation released by the board, with 162.5 acres of reclaimed land released in 1995 and 78.9 acres released in 2000. The mined area was successfully reclaimed to pasture and hay land. This area is located 2.5 miles northwest of Belle Fourche, South Dakota and is just south of an area released by the board in 2000. American Colloid is once again commended for continuing excellence in reclamation.



Photo 2.2 – Reclaimed area released by board.

New Permits

One new mine permit was issued in 2001. Dakota Granite Company submitted a large scale mine permit application in November 2000 to combine Mine Permit Numbers 15 and 27 into one permit. The application also allowed Dakota Granite to construct a new waste rock disposal facility and expand its Whetstone Quarry and other waste rock disposal facilities. The department issued the uncontested permit on April 6, 2001.

Permit Amendments

No permit amendments were issued to small or large scale mining operations in 2001.

Board of Minerals and Environment Releases Liability for Sixty-Two Exploration Permits

The Board of Minerals and Environment released liability for 62 exploration permits in 2001. In July 2001, the board released liability for two exploration permits issued to Goldstake Explorations (SD), Inc. These permits were for exploration in the Lead Deadwood area. Seven permits held by Naneco Minerals Inc. were released by the board in August. Naneco conducted exploration activities in the Rochford and Lead areas. The largest group of permits was released in October as the board approved releases of liability for 23 permits held by Homestake and 30 permits held by LAC Minerals. Homestake conducted exploration in the Lead, Rochford, Roubaix, Keystone, and Custer areas, while LAC conducted most of its exploration around its Richmond Hill mine site northwest of Lead. At the end of 2001, there were 51 active exploration permits remaining.

Table 2.1 – Number of Mine Permits and Permitted Affected, Affected, and Surface Mined Disturbed Acreage

	All Small Scale Permits	All Non-Gold Large Scale Permits	Large Scale Gold Permits¹	All Mine Permits
Number of Permits	17	18	11	46
Permitted Affected Acres	732	2,971	3,277	6,980
Total Affected Acres	42	1,663	2,403	4,108
Surface Mining Disturbed Lands Acres	39	1,380	1,916	3,335

¹ The acreage figures for large scale gold mines are separated for clarification purposes. The large scale gold mine statistics are not included in the figures for all non-gold large scale permits.

Definitions:

Small Scale Mining Permit - Permit for operations that extract less than 25,000 tons of ore or overburden per calendar year and disturb less than 10 acres of land.

Large Scale Mining Permit - Permit for operations that extract more than 25,000 tons of ore or overburden per calendar year and disturb more than 10 acres.

Permitted Affected Acres - Pursuant to SDCL 45-6B-3(1), this involves all lands permitted to be disturbed by a mining operation, including land from which overburden is to be or has been removed, and land upon which overburden, waste rock, mine spoil, or mill tailings is to be or has been deposited; land which is disturbed by the building of access roads, railroad loops, warehouses, storage areas, or other support facilities for the purpose of mining; and land affected by surface subsidence, unstable slopes, and other surface effects caused by underground mine workings.

Total Affected Acres - This includes all the land currently affected by the mining operations under permit. The total affected acres statistics are included in the figures for permitted affected acres.

Surface Mining Disturbed Lands Acres - Pursuant to SDCL 45-6B-3(15), this includes all the land from which overburden has been removed, land upon which overburden, waste rock, mine spoil, or mill tailings have been deposited, land mined which has no overburden, heap leach pads, and process ponds. The surface mining disturbed lands statistics are included in the figures for total affected acres.

Table 2.2 - Reclaimed and Released Reclaimed Acres				
	All Small Scale Permits	All Non-Gold Large Scale Permits	Large Scale Gold Permits¹	All Mine Permits
Total Reclaimed Acres	13	1,041	1,061	2,115
Reclaimed Surface Mining Disturbed Acres	9	935	959	1,903
Releasable Reclaimed Acres	4	273	780	1,057
Released Reclaimed Acres in 2001	0	64	16	80

¹ The acreage figures for large scale gold mines are separated for clarification purposes. The large scale gold mine statistics are not included in the figures for all non-gold large scale permits.

Definitions:

Total Reclaimed Acres - This includes all the land for which the operator completes required grading, topsoil replacement, erosion and drainage control, and any required planting and seeding that the department finds has resulted or will later result in final reclamation. For large scale gold mines, these acres can be applied toward reclamation acreage credit as provided under SDCL 45-6B-97.

Reclaimed Surface Mining Disturbed Acres - Pursuant to SDCL 45-6B-86, this includes all surface mining disturbed lands for which the operator has completed required grading, topsoil replacement, erosion and drainage control, and any required planting and seeding that the department finds will later result in final reclamation.

Releasable Reclaimed Acres - This includes all the reclaimed land for which reclamation surety and liability can be released as determined by the department. Such land must meet the minimum reclamation standards pursuant to ARSD 74:29:07. These figures do not include any acreage for which release of surety or liability has been granted by the Board of Minerals and Environment. The releasable reclaimed acres statistics are included in the figures for total reclaimed acres.

Released Reclaimed Acres - This includes all the reclaimed land for which reclamation surety and liability has been released by the Board of Minerals and Environment in 2001. This land has met the minimum reclamation standards pursuant to ARSD 74:29:07. The released reclaimed acres statistics are included in the figures for total reclaimed acres.

APPENDIX 1

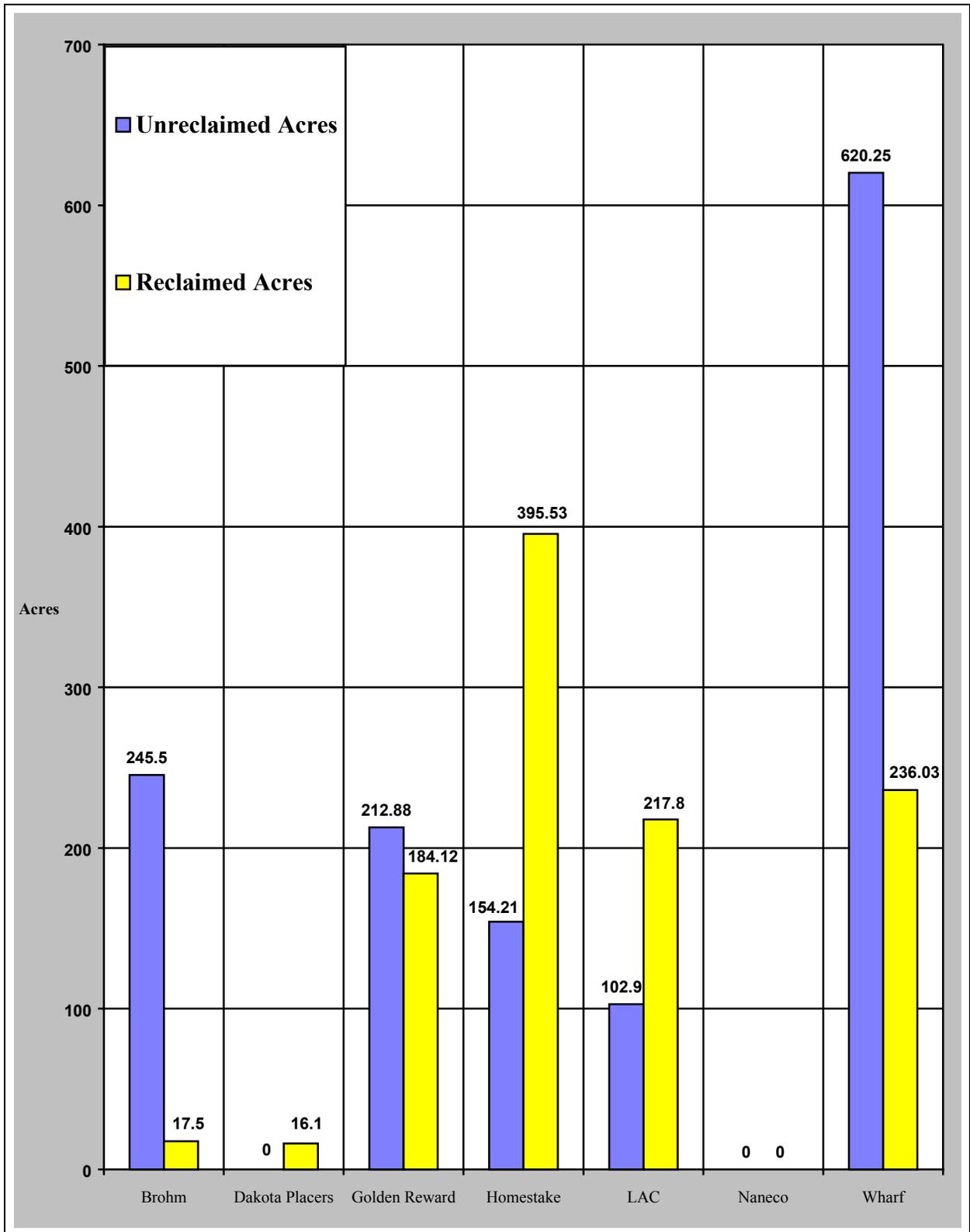


Figure 1A – Unreclaimed vs. Reclaimed Acreage at Large Scale Surface Gold Mines as of December 31, 2001.

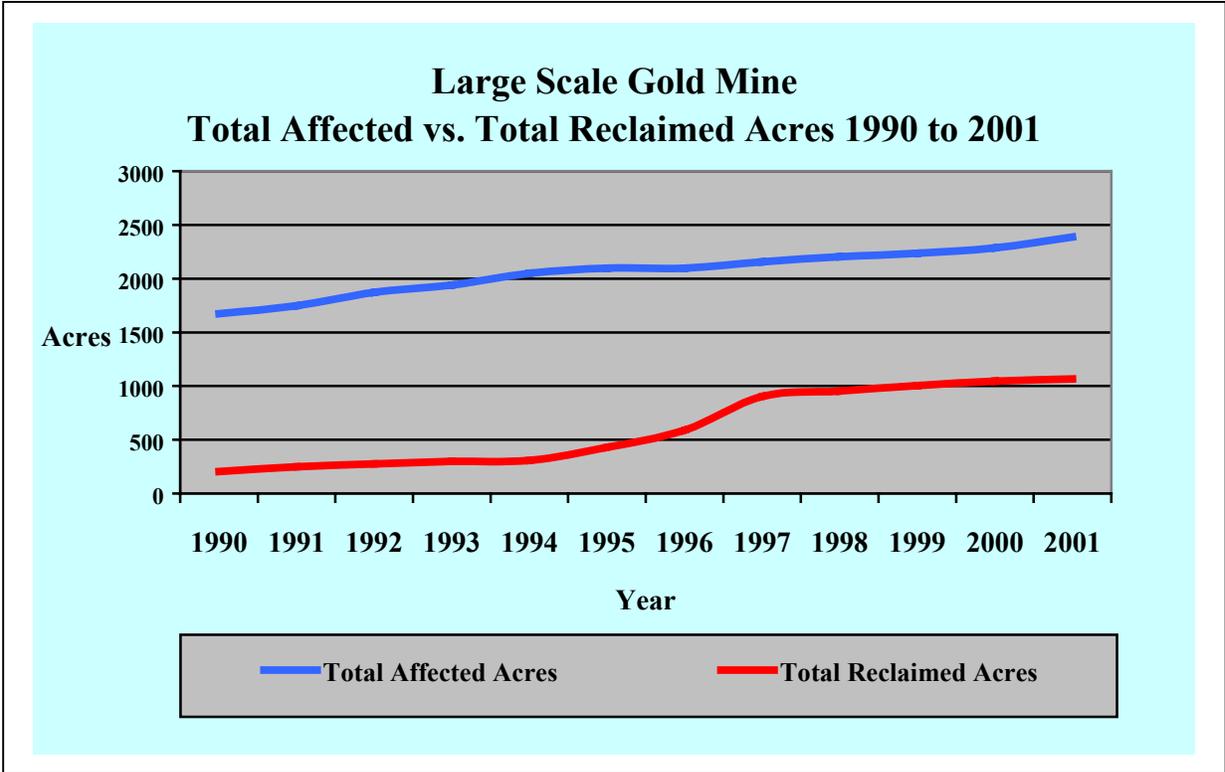


Figure 2A – Total Affected vs. Total Reclaimed Acreage at Large Scale Surface Gold Mines from 1990 to 2001.

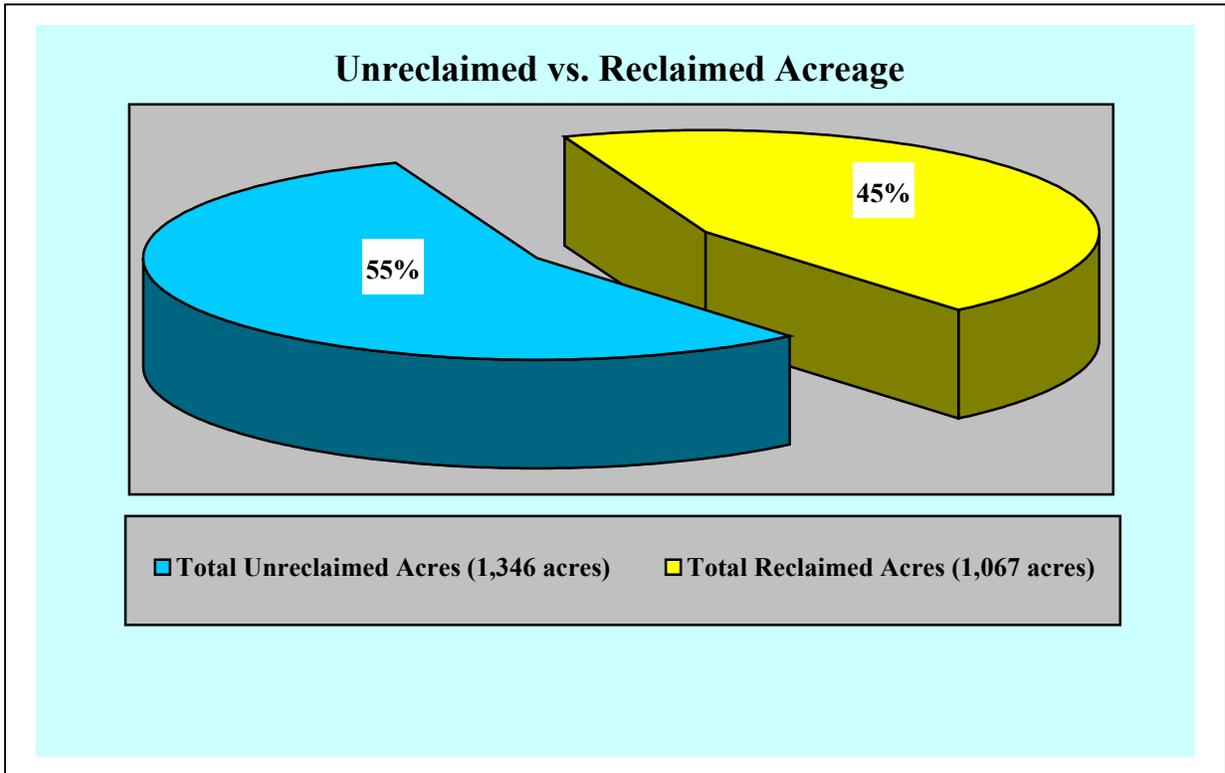


Figure 3A – Comparison of Unreclaimed vs. Reclaimed Acreage at Large Scale Surface Gold Mines in 2001.