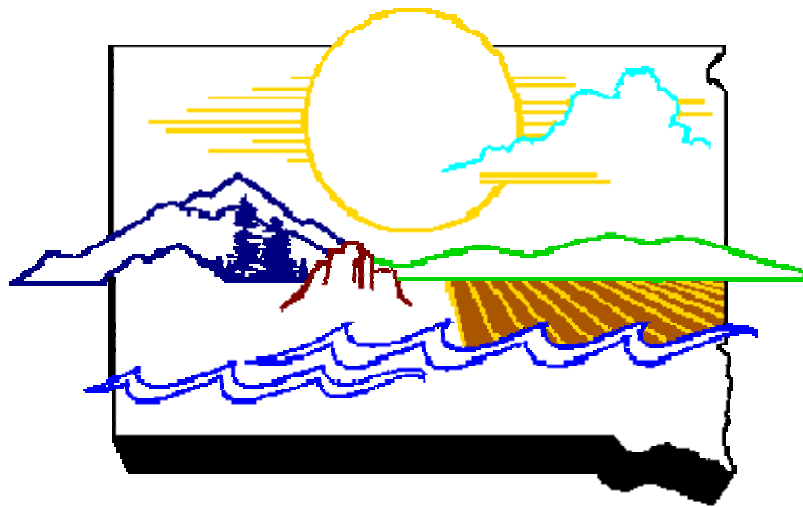


**SUMMARY OF
THE MINING INDUSTRY IN SOUTH DAKOTA**

2009



Protecting South Dakota's Tomorrow ... Today

**PREPARED BY
THE MINERALS AND MINING PROGRAM
SD DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
MAY 2010**

<http://denr.sd.gov>

Summary of the Mining Industry in South Dakota - 2009
May 2010

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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 Mine 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, 2009. The information in this report is based on annual reports and other information submitted by mining operations permitted under Chapter 45-6B.

2009 Summary

At the end of 2009, there were a total of 42 mine permits that covered mining of minerals in the state including gold, bentonite, dimension stone, slate, and mica schist. Heap leach gold mining led all permitted mines in production with 2.77 million tons of ore mined, followed by dimension stone (210,765 tons), mica schist (48,227 tons) and slate (5,380 tons). Gold production and value increased in 2009 due to higher gold prices. Wharf Resources was the only company to report gold production in 2009, with 67,738 ounces produced, an increase from the 60,665 ounces reported in 2008. The average price of gold in 2009 was \$972.35/ounce, yielding a gross value of about \$65.8 million. Other minerals produced in lesser amounts include agricultural lime, limestone, and placer gold ore.

In January, the Board of Minerals and Environment released Golden Reward's reclamation liability for 401 acres of land at its mine site near Lead. This is the second largest block of acreage the board has ever released from reclamation liability. Golden Reward is the first large scale heap leach gold mine to have reclaimed land released from reclamation liability. The board also accepted the company's postclosure plan, set a 30-year period for postclosure care and maintenance, and accepted a \$1,767,077 bond to cover monitoring and maintenance of the site during the postclosure period.

Powertech (USA), Inc. submitted various permit and license applications in 2009 for its proposed in situ uranium mine near Edgemont. Class III underground injection control (UIC) permit applications were submitted to the department and EPA. The company also submitted its uranium recovery license application to the Nuclear Regulatory Commission (NRC). Powertech hopes to submit its large scale mine permit application sometime in 2010. The department has developed a web page (<http://denr.sd.gov/des/mm/powertechpage.aspx>) which contains information for all of Powertech's permit and license applications.

\S/

Steven M. Pirner
Secretary

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

2009



Photo 1.1 – Deer utilizing wildlife habitat at Golden Reward Mine

MAJOR 2009 GOLD MINING EVENTS

There are currently 11 mine permits that cover six large scale gold mining operations in South Dakota. Wharf Resources, the only gold mine still actively mining in South Dakota, holds four of the permits. The other permits are held by Bald Mountain Mining, Golden Reward Mining, Homestake Mining, LAC Minerals, and Brohm Mining. Wharf Resources reported 67,738 ounces of gold production in 2009. With the exception of Wharf and Bald Mountain Mining, the other mines are in varying stages of reclamation and closure, with about 500 acres of Homestake's reclaimed area being released from reclamation liability and placed into postclosure in 2006. In early 2009, the Board of Minerals and Environment released about 401 reclaimed acres from reclamation liability at the Golden Reward Mine and placed them into postclosure status.

Board Grants Golden Reward Partial Release of Reclamation Liability

On January 15, 2009, the Board of Minerals and Environment granted Golden Reward's request for partial release of reclamation liability for 401.14 acres of reclaimed affected land at its mine two miles south of Lead. The released acreage includes 5.23 acres of unreclaimed land that will be used for snowmaking by the Black Hills Chairlift Company and for long term record storage by Golden Reward and Wharf Resources. This is the second largest block of acreage the board has ever released from reclamation liability. These acres are now under postclosure status. Golden Reward is the only large scale heap leach gold mine to have reclaimed acres released by the board.



Photo 1.2 – Reclaimed Golden Reward Mine.



Photo 1.3 – Reclaimed slope at Golden Reward Mine.

The board also accepted Golden Reward's postclosure plan and set a 30-year period for postclosure care and maintenance. The 30-year period was determined to be adequate based on the success of the reclamation and the absence of water quality concerns at the site with the exception of elevated sulfates in one monitoring well. Golden Reward submitted a \$1,767,077 postclosure bond to cover

monitoring and the maintenance of the site during the postclosure period and for the possible treatment of the elevated sulfates in the monitoring well.

An additional 7.30 acres will be released when Golden Reward completes weed spraying on the Pet Hill Pit and Stewart Depository areas and reseeds small areas of the North Bonanza/Fantail Depository. The department is also waiting for vegetation at the Surge Pond and Rubble Pit areas to meet the 40 percent live vegetative cover criteria. Golden Reward submitted a \$5,600 bond to cover weed spraying and reseeding costs in these areas.

In June 2009, the department inspected the reclaimed but unreleased acres at Golden Reward and Homestake. At Golden Reward, the department determined a noxious weed infestation on the Pet Hill Pit was successfully brought under control. At Homestake, the department determined a noxious weed infestation on the East Waste Rock Facility was successfully brought under control. It also determined that wildlife enhancements outlined in the Wildlife Plan for the Sawpit Waste Rock Facility were completed. As a result, on September 18, 2009, 1.76 acres on Golden Reward's Pet Hill Pit were released and placed into postclosure status and 1.96 acres on Homestake's East Waste Rock Facility and 2.88 acres on its Sawpit Waste Rock Facility were released. This increased the total amount of reclaimed acres released for large scale gold mines to 907.48 acres.

Gilt Edge Update

In 2009, EPA continued acid water treatment at the Gilt Edge Superfund site located 4.5 miles southeast of Lead. A total of 171.3 million gallons were treated and discharged in 2009, and water treatment will continue in 2010. EPA also began repairs on storm water diversion ditches along the capped Ruby Waste Rock Depository to prevent storm water from entering the depository and creating additional acid drainage.

Permit Amendments

On December 18, 2009, Wharf Resources submitted a mine permit amendment application to the department. The permit amendment application will affect an additional 18 acres of land in the western part of the American Eagle Pit. The pit will be expanded to the west, and new topsoil and low-grade ore stock piles will be added. Approximately one million tons of ore and three million tons of waste rock will be mined. Waste rock generated from this expansion will be backfilled into the American Eagle and Deep Portland pits. The department will take action on Wharf's permit amendment application in spring 2010.

Mitigation Update at Richmond Hill Mine

Reclamation activities at the Richmond Hill Mine, located four miles northwest of Lead, continue to be successful. This was an open pit heap leach gold mine that developed an acid-mine drainage

problem during operations in the early 1990's. Most of the reclamation was completed by the mine operator, LAC Minerals (USA), LLC, in the mid-1990's. The pit impoundment, backfilled with acid-generating rock and covered with a low permeability capping system, continues to perform as designed. The capped leach pads also continue to perform well. Monitoring data shows the capping systems are effective in reducing water infiltration into the spent ore.

Ground and surface water quality around the mine site is closely monitored. With a few minor exceptions, monitoring continues to show stable or improving water quality in all of the reclaimed areas. Biological assessments of Cleopatra Creek below the mine show that the stream remains healthy and supports a viable cold water fishery.

Development of Homestake Mine as Site for Deep Underground Laboratory Continues

In July 2007, the National Science Foundation selected the Homestake underground mine in Lead as the site for a deep underground science and engineering laboratory. Several milestones were reached in 2009 as work continued to convert the mine into a deep underground science and engineering laboratory. On May 13, the water in the mine was pumped down to the important 4,850-foot level of the mine which allowed work to begin on physics experiments in an interim lab at that level. On June 23, officials formally dedicated the Sanford Underground Laboratory during a ceremony at the 4850 level of the mine. After the dedication, work began on developing the interim lab at the 4850 level. On September 23, the first blast was conducted in the mine since it closed in 2001 as a tunnel was being developed to access a cavern where experiments will be conducted. In November, the Yates Shaft was reopened which provided a second access to the underground mine in addition to the Ross Shaft.

Technical Revisions Approved by the Department in 2009

- | | |
|-------------|--|
| January 21 | Wharf Resources – Construct six monitoring wells in and around the process area. |
| February 18 | LAC Minerals – Modify vegetation survey methods in the reclamation success monitoring plan. |
| February 21 | Homestake Mining – Expand the Open Cut Landfill Leachate Collection/Waste Water Collection System Emergency Pond at the East Waste Rock Depository. |
| April 20 | Homestake Mining – Construct a buttress on the north facing slope of the East Waste Rock Depository in the Bobtail Gulch area and develop a borrow area adjacent to Bobtail Gulch. |

- April 21 Wharf Resources – Install a package denitrification plant to the surface water discharge portion of the Ross Valley Biological Treatment Plant.
- June 8 LAC Minerals – Modify the Leak Detection, Collection, and Recovery System (LDCRS) monitoring requirements and Leakage Response Action Plan for the leach pads, holding ponds, and water treatment plant.
- July 13 Wharf Resources – Modify the current water monitoring sampling plan contained in Mine Permit Nos. 356 and 464 and Ground Water Discharge Permits GWD 1-88, GWD 1-94, and GWD 1-98.
- August 3 Wharf Resources – Modify the Action Leakage Rate plans for the heap leach pad liners, the process water lined ponds, and the Ross Valley and Reliance Holding Ponds.
- August 18 Wharf Resources – Construct 13 injection wells in and around the Wharf process area, convert well PW-1 for use as an injection well, and use these wells for in-situ treatment of ground water.
- August 31 Wharf Resources – Remove topsoil and rehandle material along portions of the access road reroute south of the current access road and west and northwest of the Deep Portland Pit.
- September 25 Wharf Resources – Mine the pushback of the American Eagle Pit into the Deep Portland Pit and the Deep Portland pit into the Trojan Pit, reroute the access road and utilities, and relocate the Trojan fuel station.
- September 28 Wharf Resources – Construct a liner that would connect the 33 Vertical and Polo lined containment areas for spent ore disposal.
- October 13 Wharf Resources – Construct additions to the Wharf Administration Building and the Ross Valley Storage Building.
- November 10 Wharf Resources – Offload spent ore to the Reliance Depository.

LARGE SCALE GOLD 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. Acreage from the Gilt Edge Superfund site that was previously mined by Brohm is included in the tables to show the progress being made to reclaim the mine site.

Various charts and graphs comparing total affected, total reclaimed, and released acreage are in Appendix 1. The bar chart on page A-2 compares affected acreage, reclaimed acreage, and released acreage for each company. The graph on page A-2 shows the trend of total affected acres, total reclaimed acres, and released acres for the large scale gold industry from 1990 to 2009. The pie chart on page A-3 shows total reclaimed acres, total unreclaimed acres, and released acres for the large scale gold mine industry in 2009.



Photo 1.4 – Reclaimed portion of Gold Run Creek after removal of Homestake’s Slurry Plant.

TABLE 1.1 – AFFECTED MINED LAND ACREAGE

Permit Number	Operator	Permitted Affected Acres	Acres Affected Year 2009	Total Acres Affected as of Dec. 31, 2009
416	Bald Mountain Mining	122.00	0.00	0.00
439 & 462	Brohm Mining Corp.	564.00	0.00	263.00
450	Golden Reward Mining Co., LP	5.54	0.00	5.54
332 & 456	Homestake Mining Company	173.71	0.98	133.53
445	LAC Minerals (USA), LLC	439.10	0.00	337.37
356, 434, 435, & 464	Wharf Resources (USA), Inc.	1104.74	0.00	1040.89
TOTALS		2409.09	0.98	1780.33

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. Released acres are not included.

Acres Affected Year 2009 - Previously unaffected acres disturbed from January 1 to December 31, 2009. This acreage is also included in "Total Acres Affected as of Dec. 31, 2009."

Total Acres Affected as of Dec. 31, 2009 - All land currently affected by the large scale gold and silver operations under permit as of December 31, 2009. This includes all lands described above in "Permitted Affected Acres." Released acres are not included.

TABLE 1.2 – SURFACE MINING DISTURBED LAND ACREAGE			
Permit Number	Operator	Surface Mining Disturbed Acres Year 2009	Total Surface Mining Disturbed Acres as of Dec. 31, 2009
416	Bald Mountain Mining	0.00	0.00
439 & 462	Brohm Mining Corp.	0.00	202.10
450	Golden Reward Mining Co., LP	0.00	5.54
332 & 456	Homestake Mining Company	0.98	104.84
445	LAC Minerals (USA), LLC	0.00	202.02
356, 434, 435, & 464	Wharf Resources (USA), Inc.	0.00	970.85
TOTALS		0.98	1485.35

Definitions:

Surface Mining Disturbed Acres Year 2009 - Previously unaffected surface mining land disturbed from January 1 to December 31, 2009. This acreage is also included in "Total Surface Mining Disturbed Acres as of Dec. 31, 2009."

Total Surface Mining Disturbed Acres as of Dec. 31, 2009 - 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. Released acres are not included.

TABLE 1.3 – INTERIM RECLAIMED ACREAGE

Permit Number	Operator	Interim Reclaimed Acres Year 2009	Total Interim Reclaimed Acres as of Dec. 31, 2009
416	Bald Mountain Mining	0.00	0.00
439 & 462	Brohm Mining Corp.	0.00	0.95
450	Golden Reward Mining Co., LP	0.00	0.00
332 & 456	Homestake Mining Company	0.00	0.00
445	LAC Minerals (USA), LLC	0.00	13.99
356, 434, 435, & 464	Wharf Resources (USA), Inc.	0.00	29.08
TOTALS		0.00	44.02

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 2009 - Acres under interim reclamation from January 1 to December 31, 2009. These acres are also included in "Total Interim Reclaimed Acres."

Total Interim Reclaimed Acres as of Dec. 31, 2009 - The total number of acres under interim reclamation as of December 31, 2009. Acres redisturbed or now considered as final reclamation are not included in these totals.

TABLE 1.4 – FINAL RECLAIMED ACREAGE FOR YEAR 2009

Permit Number	Operator	Final Reclaimed Acres Year 2009 that Meet Post-Mine Land Use	Final Reclaimed Acres Year 2009 that Do Not Meet Post-Mine Land Use
416	Bald Mountain Mining	0.00	0.00
439 & 462	Brohm Mining Corp.	0.00	0.00
450	Golden Reward Mining Co., LP	0.00	0.00
332 & 456	Homestake Mining Company	0.00	6.60
445	LAC Minerals (USA), LLC	0.00	0.00
356, 434, 435, & 464	Wharf Resources (USA), Inc.	0.00	8.94
TOTALS		0.00	15.54

Definitions:

Final Reclaimed Acres Year 2009 That Meet Post-Mine Land Use – Affected land reclaimed prior to 2009, previously considered as not meeting the post-mine land use, that met the post-mine land use in 2009. These acres meet the requirements of the reclamation plan, SDCL 45-6B, and ARSD 74:29, and can be considered for bond release. Released acres are not included.

Final Reclaimed Acres Year 2009 That Do Not Meet Post-Mine Land Use - Affected land reclaimed between January 1 and December 31, 2009, 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 AND RELEASED ACREAGE**As of December 31, 2009**

Permit Number	Operator	Final Reclaimed Acres that Meet Post-Mine Land Use¹	Final Reclaimed Acres that Do Not Meet Post-Mine Land Use	Final Reclaimed Acres that Have Been Released
416	Bald Mountain Mining	0.00	0.00	0.00
439 & 462	Brohm Mining Corp.	0.00	79.50	0.00
450	Golden Reward Mining Co., LP	3.13	2.41	402.90
332 & 456	Homestake Mining Company	8.24	108.03	504.58
445	LAC Minerals (USA), LLC	241.98	19.97	0.00
356, 434, 435, & 464	Wharf Resources (USA), Inc.	291.11	128.73	0.00
TOTALS		544.46	338.64	907.48

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, 2009, 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. Released acres are not included.

Final Reclaimed Acres That Do Not Meet Post-Mine Land Use - Affected land reclaimed as of December 31, 2009, 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.

Final Reclaimed Acres that Have Been Released – Final reclaimed acres that meet the post-mine land use and have been released by the Board of Minerals and Environment. These acres are now under postclosure status.

**TABLE 1.6 – SURFACE MINED RECLAMATION ACREAGE AND
RECLAMATION CREDITS
As of December 31, 2009**

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)
416	Bald Mountain Mining	0.00	0.00
439 & 462	Brohm Mining Corp.	65.00	73.20
450	Golden Reward Mining Co., LP	5.54	5.54
332 & 456	Homestake Mining Company	88.33	116.27
445	LAC Minerals (USA), LLC	171.63	261.95
356, 434, 435, & 464	Wharf Resources (USA), Inc.	414.17	419.84
TOTALS		744.67	876.80

Definitions:

Surface Mined Acres Reclaimed - Total amount of surface mining disturbed acres under final reclamation as of December 31, 2009. 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. Released acres are not included.

Total Affected Acres Reclaimed That Apply as Reclamation Credit per 1992 Mining Initiative - Affected land under final reclamation as of December 31, 2009, 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. Released acres are not included.

**TABLE 1.7 - ORE AND WASTE ROCK PRODUCTION
January 1 to December 31, 2009**

Permit Number	Operator	Tons of Ore Mined Year 2009	Tons of Ore Processed Year 2009	Tons of Waste Rock and Overburden Mined Year 2009
416	Bald Mountain Mining	0	0	0
439 & 462	Brohm Mining Corp.	0	0	0
450	Golden Reward Mining Co., LP	0	0	0
332 & 456	Homestake Mining Company (Open Cut)	0	0	0
445	LAC Minerals (USA), LLC	0	0	0
356, 434, 435, & 462	Wharf Resources (USA), Inc.	2,776,530	2,874,510	10,386,671
TOTALS		2,776,530	2,874,510	10,386,671

**TABLE 1.8 – GOLD AND SILVER PRODUCTION
January 1 to December 31, 2009**

Permit Number	Operator	Ounces of Gold Produced Year 2009	Ounces of Silver Produced Year 2009
416	Bald Mountain Mining	0	0
439 & 462	Brohm Mining Corp.	0	0
450	Golden Reward Mining Co., LP	0	0
332 & 456	Homestake Mining Company	0	0
445	LAC Minerals (USA), LLC	0	0
356, 434, 435, & 462	Wharf Resources (USA), Inc.	67,738	234,751
TOTALS		67,738	234,751
ESTIMATED VALUE¹		\$65,865,044	\$3,443,797

¹Based on 2009 average gold price of \$972.35/oz and 2009 average silver price of \$14.67/oz.

**TABLE 1.9 – WATER AND CYANIDE USE
January 1 to December 31, 2009**

Permit Number	Operator	Gallons Ground Water Withdrawn Year 2009	Gallons Surface Water Withdrawn Year 2009	Pounds of Cyanide Used Year 2009
416	Bald Mountain Mining	0	0	0
439 & 462	Brohm Mining Corp.	0	0	0
450	Golden Reward Mining Co., LP	100,000	0	0
332 & 456	Homestake Mining Company	0	0	0
445	LAC Minerals (USA), LLC	531,000	0	0
356, 434, 435, & 462	Wharf Resources (USA), Inc.	65,155,400	81,929,922	1,213,377
TOTALS		65,786,400	81,929,922	1,213,377

TABLE 1.10 – BOND AMOUNTS FOR LARGE SCALE GOLD MINES				
As of December 31, 2009				
Permit Number	Operator	Reclamation Bond	Postclosure Bond¹	Cyanide Spill Bond²
416	Bald Mountain Mining	\$13,362	\$0	\$0
439 & 462	Brohm Mining Corp.	\$7,012,784 ³	\$0	\$0
450	Golden Reward Mining Co., LP	\$5,600	\$1,767,077	\$0
332 & 456	Homestake Mining (Open Cut)	\$1,246,000	\$42,863,945	\$0
445	LAC Minerals (USA), LLC	\$10,700,000 ⁴	\$0	\$0
356, 434, 435, & 464	Wharf Resources (USA), Inc.	\$15,486,422 ⁴	\$8,120,700 ⁴	\$523,500

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.

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 and has submitted a \$523,500 bond since the maximum amount was increased to \$1 million on July 1, 2009.

³ Because of Dakota Mining Corp’s bankruptcy, Brohm’s reclamation bond has been placed in a state account for use in reclamation of the Gilt Edge Mine. \$2 million was used for reclamation expenses in March 2002. Interest from the bond is compounded and applied to the bond. The bond amount shown is current as of December 31, 2009.

⁴The department is in the process of reviewing reclamation and postclosure bond calculations for LAC Minerals and Wharf Resources. Any revisions to the calculations will be completed in 2010.

OPERATIONAL PLANS FOR 2010

Bald Mountain Mining

On June 23, 2009, Large Scale Mine Permit No. 416 was transferred from E4 Energy to the Bald Mountain Mining Co. The permit covers a site located about 5 miles west of Lead in the Ragged Top area along the rim of Spearfish Canyon. No mining has been conducted under the mine permit since it was originally issued to Homestake in 1984. Bald Mountain Mining hopes to mine the property in the future.

Brohm Mining Corp.

EPA will continue water treatment at the Superfund site located 4.5 miles southeast of Lead in 2010. Routine operation and maintenance activities will continue through the year. The remaining reclamation activities are anticipated to begin when federal Superfund money becomes available. The department will review the preliminary remedial design for Operational Unit 1 (OU1) which covers reclamation of the site except for the reclaimed Ruby Depository.

Golden Reward Mining Company, LP

Golden Reward will continue inspection and maintenance activities at the mine site as required under its postclosure monitoring plan. The company will also assess exploration data for potential future mining.

Homestake Mining Company (Barrick Gold Corp.)

Homestake will continue reclamation and closure activities in 2010 at its Lead Open Cut surface mine. Postclosure monitoring, maintenance, and water treatment activities will continue in the released areas. The company will complete work on the removal of a portion of the Deadwood Creek crossing that was part of the haul road to the Sawpit Waste Rock Facility.

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

LAC Minerals will continue monitoring and active water treatment at the Richmond Hill Mine located four miles northwest of Lead. The company also plans to submit a release of reclamation liability petition, updated reclamation plan for unreclaimed areas of the mine site, and a postclosure plan to the department sometime in 2010. There are also plans to modify the process area holding ponds.

Wharf Resources (USA), Inc.

Wharf will continue to mine the area between the American Eagle, Deep Portland, and Trojan Pits. The department will continue processing the permit amendment application submitted in December 2009 to expand the American Eagle Pit to the west. Final action on the permit amendment application is anticipated in spring 2010. Crushed ore from the mining area will be loaded onto Leach Pads 2 and 3. Leach Pad 2 and possibly Leach Pad 5 will be off loaded. Off loaded spent ore from the leach pads will be placed on the lined Polo/33 Vertical Spent Ore Depository. The company will also assess exploration data for potential future expansion of the mine.



Photo 1.4 – View of reclaimed Juno Waste Rock Depository at Wharf.

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

2009



Photo 2.1 – Reclaimed grout pile at Cold Spring Granite’s Carnelian No. 1 Quarry.

SUMMARY OF ALL MINE PERMITS

This portion of the report summarizes information on the number of acres of surface mining disturbed land and the amount reclaimed as required by SDCL 45-6B-86 for the period January 1 to December 31, 2009. This does not include acreages for mining operations regulated under SDCL Chapter 45-6 (519 licensed mine operators and 1,821 active licensed sites), mineral exploration regulated under SDCL Chapter 45-6C (11 operators and 27 permits, excluding oil and gas), or uranium exploration regulated under SDCL Chapter 45-6D (1 operator, 1 permit.) Sources for this information include permit applications, operating and reclamation plans, annual reports, department inspections, and operator information.

New Mine Permit Applications

No new mine permits were granted in 2009. However, the department continued review of two large scale mine permit applications submitted by American Colloid Company for bentonite in the Shear/Clarkson area near Belle Fourche. About 62 acres will be mined and about 186 acres will be affected at the Shear/Clarkson East operation, while about 44 acres will be mined and about 177 acres will be affected at the Shear/Clarkson West operation. Both areas will be mined using cut and fill mining techniques and will be reclaimed to rangeland for livestock grazing. The department's determination on both permit applications will be issued in spring 2010.

In January 2010, American Colloid submitted two large scale mine permit applications for bentonite in the Davis Ranch area north of Belle Fourche. About 100 acres will be mined and about 265 acres will be affected at the Davis North operations, while about 121 acres will be mined and about 238 acres will be affected at the Davis South operation. Both areas will be mined using cut and fill mining techniques and will be reclaimed to rangeland for livestock grazing. The department's determination on both permit applications will be issued in 2010.



Photo 2.2 – Proposed Davis North mine area.



Photo 2.3 – Proposed Davis South mine area.

Douglas Ottema submitted a small scale mine permit application to the department on April 13, 2009 for a proposed placer gold mining operation near Tinton. Mr. Ottema will affect a total of 10 acres and remove a maximum of 25,000 tons of ore annually during the 20 year life of the project. Mining will be conducted in three phases, and ore extracted during each phase will be processed using a gravity wash process plant. Reclamation will be conducted concurrently with mining. The proposed future use of the mine is grassland. The department's determination on the application will be issued in April 2010.

Permit Amendments

The department continued review of Pacer Corporation's application to amend Large Scale Mine Permit No. 467. The amendment would allow Pacer to add about 41 acres of contiguous affected land inside the mine permit boundary. Most of the additional acreage will be used to expand the current mine pit to the north and west. The department will take action on the permit amendment application sometime in 2010.

Special or Unique Land Determinations

Five special, exceptional, critical, or unique lands determinations for proposed mining operations were made in 2009. This is the first step in the process of obtaining a state mine permit. Powertech's request for determination for a proposed in situ uranium mine about 13 miles northwest of Edgemont drew the most attention. The in situ mining process involves injecting ground water fortified with carbon dioxide and oxygen into an aquifer containing the uranium. The uranium is then oxidized, dissolved, and pumped out of the aquifer to a central processing facility where the water will be treated to remove the uranium.

On December 31, 2008, the department determined that the area was not eligible for inclusion on the preliminary list of special, exceptional, critical, or unique lands. However, the Oglala Sioux Tribe, Defenders of the Black Hills, and two individuals filed petitions to have the area declared special, exceptional, critical, and unique. The Board of Minerals and Environment held a hearing on February 19, 2009, to consider the petitions and determine whether the area should be placed on the preliminary list. On April 20, 2009, the board determined that the area was not eligible for inclusion on the preliminary list of special, exceptional, critical, or unique lands.

In September, American Colloid submitted requests for determination for two proposed large scale bentonite mining operations about eighteen miles north of Belle Fourche in the Davis Ranch area. On December 7, 2009, the department determined that both areas were not eligible for inclusion on the preliminary list of special, exceptional, critical, or unique lands. American Colloid has since submitted large scale mine permit applications for the Davis ranch area (see New Mine Permit Applications section).

The department also received two requests for determination for proposed small scale placer mining operations. In October 2008, Bret Aye submitted a request for determination for a proposed placer

mining operation along Boulder Creek about three miles southwest of Sturgis. Mr. Aye plans to use a backhoe to excavate gravel, cobbles, and boulders from the bed of the creek and process the material through a trommel sluice. On January 20, 2009, the department determined the proposed mining area was not eligible for inclusion on the preliminary list of special, exceptional, critical, or unique lands. In January 2009, Heath McCann and Gordon Critchfield submitted a request for determination for a proposed placer mining operation along Castle Creek about 10 miles northwest of Hill City. Mr. McCann and Mr. Critchfield plan to use a suction dredge, sluice box, and hand held equipment to mine material from an area adjacent to the creek. On November 16, 2009, the department determined that the proposed mining area was not eligible for inclusion on the preliminary list of special, exceptional, critical, or unique lands.

Powertech Submits Permit Applications for Proposed In Situ Uranium Mining Operation

Powertech (USA), Inc. submitted several federal and state permit applications in 2009 for its proposed in situ uranium mining operation about 13 miles northwest of Edgemont. The company submitted its Class III Underground Injection Control (UIC) Permit application to the department on April 22, 2009. The department determined that the application was incomplete on August 6, 2009. Powertech submitted a revised UIC permit application in February 2010, and the department is currently reviewing the revised application for completeness.

The company also submitted a Class III UIC permit application to the Environmental Protection Agency (EPA) in December 2008. The company is required to obtain both a state and federal Class III UIC permit prior to mining. EPA has determined that the application is complete and is currently conducting a technical review of the application.

On February 25, 2009, Powertech submitted a uranium recovery license application to the Nuclear Regulatory Commission (NRC). The NRC informed the company that the application would not be accepted for technical and environmental review since some required information was not included in the application. Powertech resubmitted the application on August 10, 2009 with additional information, and the NRC found it acceptable for technical and environmental review on October 2, 2009. The NRC is currently conducting its technical and environmental review of the application.

Powertech is planning to submit its large scale mine permit application along with several other permit applications to the department sometime in 2010.

The department has developed a web page for Powertech's mine and exploration permit applications which can be found at <http://denr.sd.gov/des/mm/powertechpage.aspx>. The web page has links to information from the department's permit files such as permit applications, correspondence, public notices, and inspection reports.

Board Releases Additional Acres Reclaimed by American Colloid Company

On October 15, 2009, the Board of Minerals and Environment released American Colloid's reclamation liability on a 23.60 acre area mined under Large Scale Mine Permit No. 465. After mining was completed, American Colloid reclaimed the area to grazing and hay land. So far, the board has released American Colloid's liability on 373.60 acres of reclaimed land affected under six mine permits.



Photo 2.4 – Area mined and reclaimed under Large Scale Mine Permit No. 465.

Table 2.1 – Number of Mine Permits and Permitted Affected, Total Affected, and Surface Mine Disturbed Acreage				
	All Small Scale Permits	All Non-Gold Large Scale Permits	Large Scale Gold Permits¹	All Mine Permits
Number of Permits	16	15	11	42
Permitted Affected Acres	562	2,806	2,409	5,777
Total Affected Acres	44	1,687	1,780	3,511
Surface Mining Disturbed Lands Acres	29	1,369	1,485	2,883

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	23	933	877	1,833
Reclaimed Surface Mining Disturbed Acres	13	868	745	1,626
Releasable Reclaimed Acres	14	292	544	850
Released Reclaimed Acres in 2009	0	24	403	430

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 2009. 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

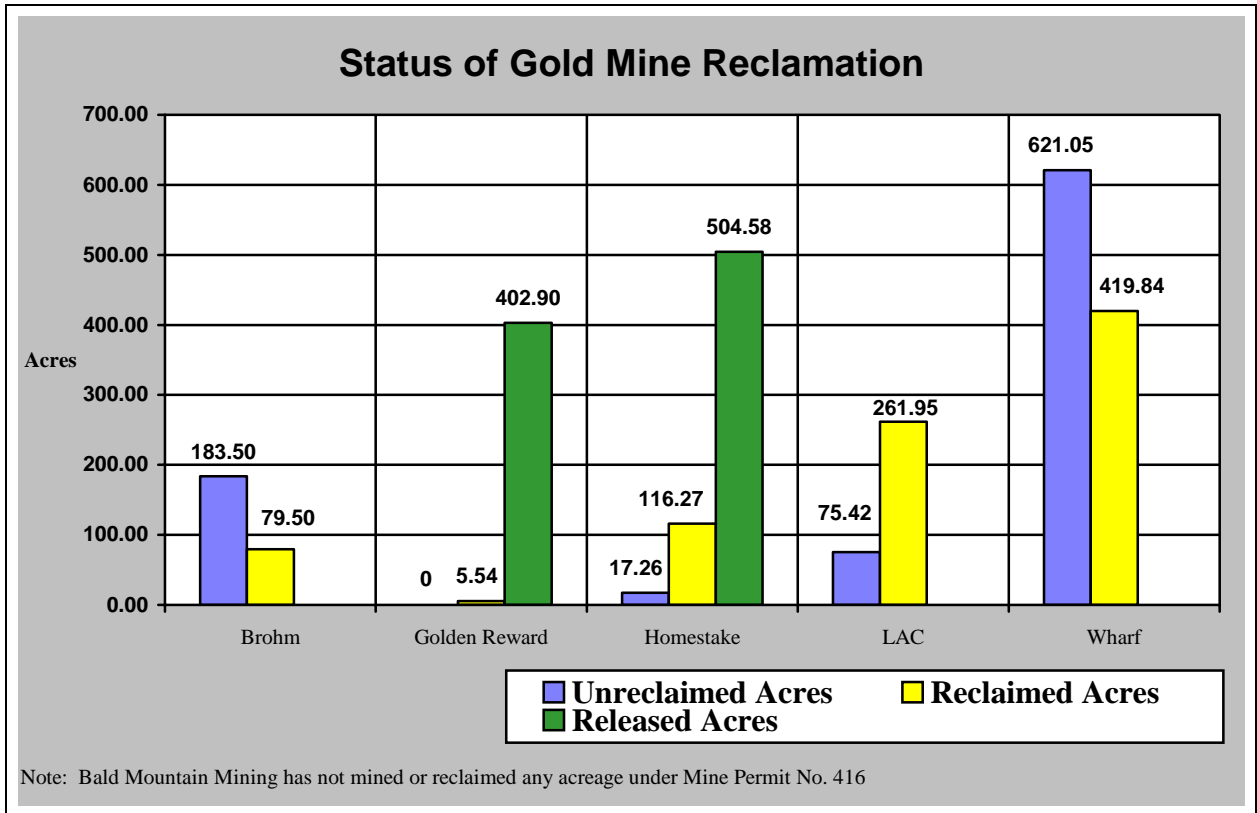


Figure 1A – Unreclaimed, Reclaimed, and Released Acres at Large Scale Surface Gold Mines as of December 31, 2009.

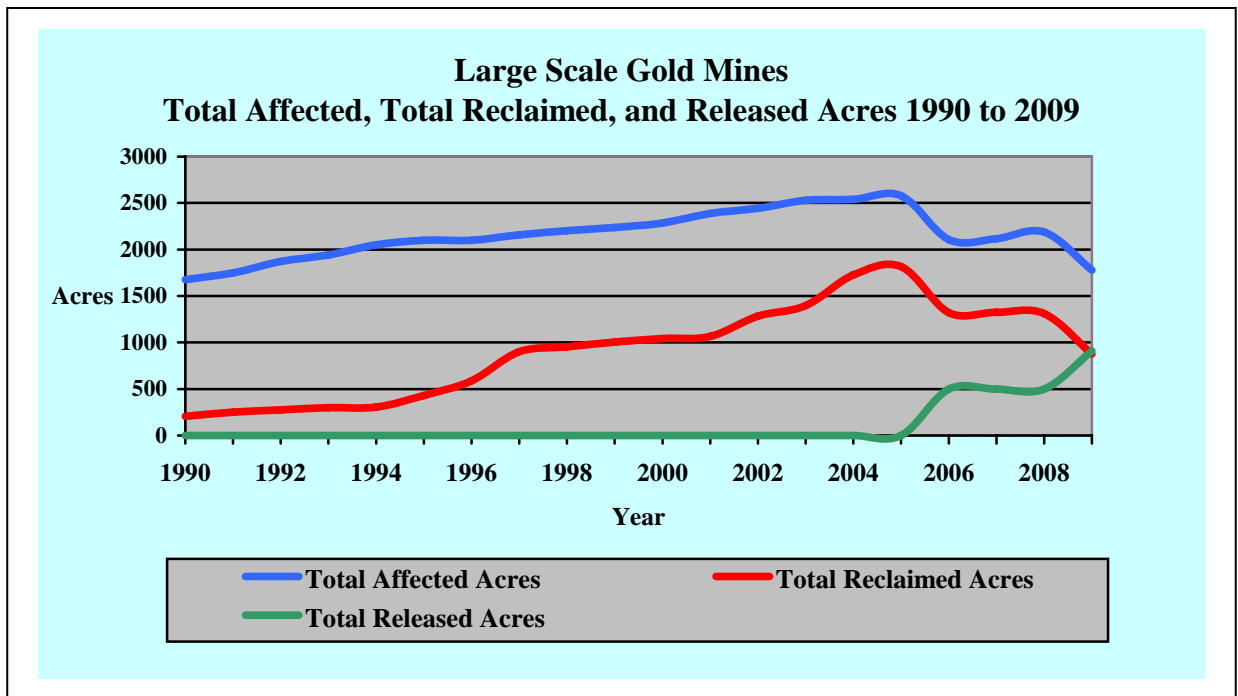


Figure 2A – Total Affected, Total Reclaimed, and Released Acreage at Large Scale Surface Gold Mines from 1990 to 2009.

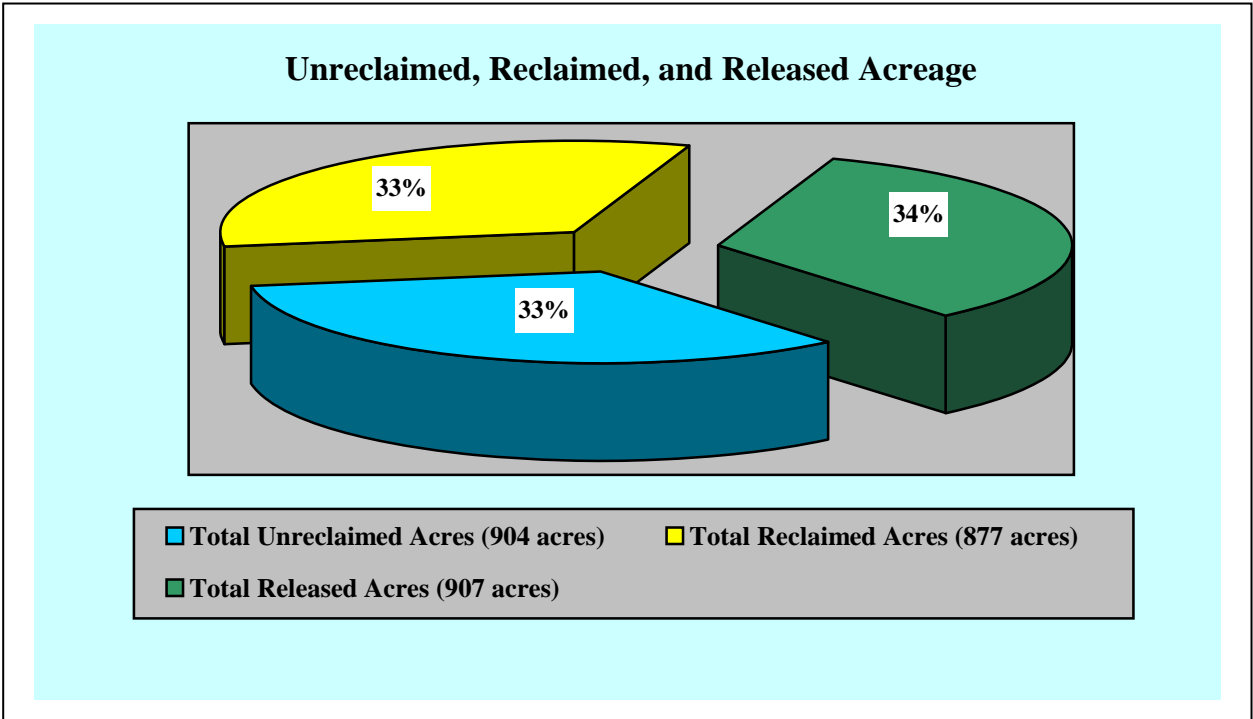


Figure 3A – Comparison of Unreclaimed, Reclaimed, and Released Acreage at Large Scale Surface Gold Mines in 2009.